



Durham E-Theses

Neolithic and chalcolithic cultures in Turkish Thrace

Erdogu, Burcin

How to cite:

Erdogu, Burcin (2001) *Neolithic and chalcolithic cultures in Turkish Thrace*, Durham theses, Durham University. Available at Durham E-Theses Online: <http://etheses.dur.ac.uk/3994/>

Use policy

The full-text may be used and/or reproduced, and given to third parties in any format or medium, without prior permission or charge, for personal research or study, educational, or not-for-profit purposes provided that:

- a full bibliographic reference is made to the original source
- a [link](#) is made to the metadata record in Durham E-Theses
- the full-text is not changed in any way

The full-text must not be sold in any format or medium without the formal permission of the copyright holders.

Please consult the [full Durham E-Theses policy](#) for further details.

NEOLITHIC AND CHALCOLITHIC CULTURES IN TURKISH THRACE

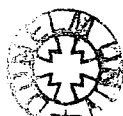
Burcin Erdogu

Thesis Submitted for Degree of Doctor of Philosophy

The copyright of this thesis rests with the author.
No quotation from it should be published without
his prior written consent and information derived
from it should be acknowledged.

University of Durham
Department of Archaeology

2001



14 OCT 2002

Neolithic and Chalcolithic Cultures in Turkish Thrace

ABSTRACT

The subject of this thesis are the Neolithic and Chalcolithic cultures in Turkish Thrace. Turkish Thrace acts as a land bridge between the Balkans and Anatolia. Along this land bridge it might be expected that there has been a transfer of ideas, exchange and movement of objects between two regions. Intensive survey in a selected part of Turkish Thrace - the Edirne region - and systematic field collection techniques on selected sites were conducted. Intensive surveys in the Edirne region have provided important evidence relating to past land use and settlement systems. On the basis of examination settlements and artefacts, local Neolithic and Chalcolithic cultures closely related to the Balkan cultures were defined. One of the research problems in Turkish Thrace is the apparent dramatic decrease in population in the late Chalcolithic period. All late Chalcolithic sites are small relative to those of other Chalcolithic cultures in the Balkans. There are as yet no geographical studies, soil analysis or pollen diagrams from Turkish Thrace. However, it seems most likely that the depopulation of Turkish Thrace can be explained by a combination of environmental changes, soil changes or exchange network collapse. In Neolithic and Chalcolithic period, some of the Anatolian material looks similar to those of the Balkans. Similarities may be explained by the interaction sphere model. An interaction sphere is defined as an information or item exchange system through which aspects of culture are transferred and which ultimately produces regional similarities. Metabasite stone axes from the Şarköy axe factories were found in the Early Neolithic levels of Hoca Çeşme as well as on settlements in the Edirne region. Honey flint of Northeast Bulgaria and Aegean *Spondylus* were found in the Neolithic and Chalcolithic settlements of Turkish Thrace. These examples begin to introduce the nature of the exchange network in Turkish Thrace.

TABLE OF CONTENTS

| | |
|---|-----------|
| LIST OF FIGURES, TABLES AND PLATES | 5 |
| PREFACE | 12 |
| CHAPTER I. INTRODUCTION | |
| I.A. GENERAL INTRODUCTION | 14 |
| I.A.1. Aim of the Research | 14 |
| I.A.2. The Research Design | 16 |
| I.A.3. Terminology and Chronology | 17 |
| I.B. PHYSICAL ENVIRONMENT | 18 |
| I.B.1. Topography | 18 |
| I.B.2. Geology | 20 |
| I.B.3. Climate, Temperature and Soil | 21 |
| I.B.4. Natural Resources | 23 |
| I.B.5. Vegetation | 24 |
| I.B.6. The Coastal Morphology of the Black Sea and the Sea of Marmara. | 26 |
| I.C. HISTORY OF INVESTIGATIONS | 27 |
| I.C.1. Previous Researches in Turkish Thrace | 27 |
| I.C.2. Previous Survey and Excavation Results in Turkish Thrace | 29 |
| I.C.3. Previous Research on Connections Between Southeast Europe and Anatolia. | 33 |
| I.D. RESEARCH PROBLEMS | 39 |
| I.D.1. Problems in Material Culture | 39 |
| I.D.2. Problems in Settlement Studies | 40 |
| I.D.3. Problems in the Relationships between Anatolia and the Balkans | 41 |

CHAPTER II. SURFACE SURVEY DATA

| | |
|--|----|
| II.A. INTRODUCTION | 42 |
| II.B. SITE AND NON-SITE | 44 |
| II.C. NON-SITE OR OFF-SITE ARCHAEOLOGY | 45 |
| II.C.1. Natural Artefact Transport and Post Depositional Disturbance | 46 |
| II.C.2. Interpreting Off-site Artefacts | 48 |
| II.D. SURFACE SURVEYS IN EASTERN THRACE | 49 |
| II.D.1. Description of Extensive and Intensive Survey Areas | 51 |
| II.D.2. Block and Transect Survey Results | 54 |
| II.D.3. 10x10 m Grid-collecting Results | 59 |
| II.D.4. Concluding Remarks | 69 |
| II.E. GAZETTER OF SETTLEMENTS | 71 |

CHAPTER III. DESCRIPTION OF SETTLEMENT PATTERN

| | |
|--|-----|
| III.A. INTRODUCTION | 81 |
| III.B. SETTLEMENT PATTERNING | 82 |
| III.C. SETTLEMENT TYPES | 87 |
| III.D. SETTLEMENT MOBILITY | 88 |
| III.E. SETTLEMENT PATTERN IN TURKISH THRACE | 91 |
| III.E.1. Settlement pattern in the Edirne Region | 93 |
| III.F. CONCLUDING REMARKS | 106 |

CHAPTER IV. ARTEFACTS

| | |
|--|-----|
| IV.A. INTRODUCTION | 109 |
| IV.B. POTTERY | 110 |
| IV.B.1. Introduction | 110 |
| IV.B.2. Social and Cultural Aspects of Pottery | 111 |
| IV.B.3. Pottery From The Edirne Region | 113 |
| IV.B.3.1. Manufacture | 114 |
| IV.B.3.2. Wares | 115 |
| IV.B.3.3. Forms | 120 |
| IV.B.3.4. Decoration and Design | 129 |
| IV.B.3.5. Function and Size | 136 |
| IV.B.3.6. Analysis | 141 |
| IV.B.4. Concluding Remarks | 144 |

| | |
|--|---------|
| IV.B. CHIPPED STONE | 146 |
| IV.B.1. Introduction | 146 |
| IV.B.2. Technological Analysis of Chipped Stone Industries in the Edirne Region | 147 |
| IV.B.3. Raw Material | 149 |
| IV.B.4. Typological Analysis of the Neolithic and Chalcolithic Chipped Stone Industries in the Edirne Region | 150 |
| IV.B.5. Analysis and Typological Analogies | 157 |
| IV.B.6. Concluding Remarks | 159 |
| IV.C. STONE AXES | 159 |
| IV.C.1. Introduction | 159 |
| IV.C.2. Prehistoric Axe Factories in Turkish Thrace | 162 |
| IV.C.3. Axe-manufacturing Processes | 164 |
| IV.C.4. Raw material and Source | 165 |
| IV.C.5. Distribution of the Stone Axes | 165 |
| IV.C.6. Dating Prehistoric Stone Axe Factories | 167 |
| IV.C.7. The Axes Found During the Survey in the Edirne Region | 168 |
| IV.C.8. Concluding Remarks | 169 |
| IV.D. FIGURINES | 169 |
| IV.D.1. Introduction | 169 |
| IV.D.2. Previous Researches in Prehistoric Figurines | 171 |
| IV.D.3. The Figurines Found During the Survey in the Edirne Region | 173 |
| IV.D.3.1. Catalogue | 174 |
| IV.D.3.2. Typological Analogies | 175 |
| IV.D.4. Concluding Remarks | 176 |
| CHAPTER V: THE NEOLITHIC AND CHALCOLITHIC CULTURES IN TURKISH THRACE AND THEIR EXTERNAL RELATIONS | |
| V.A. INTRODUCTION | 178 |
| V.B. THE NEOLITHIC AND CHALCOLITHIC CULTURES OF TURKISH THRACE | 179 |
| V.B.1. Neolithic | 179 |
| V.B.2. Chalcolithic | 204 |
| V.C. CONCLUDING REMARKS | 216 |

CHAPTER VI. THE ROLE OF TURKISH THRACE BETWEEN THE BALKANS AND ANATOLIA

| | |
|--|------------|
| VI.A. THE EXPLANATION OF CULTURAL CHANGE IN NEOLITHIC AND CHALCOLITHIC TURKISH THRACE | 220 |
| VI.A.1. The origins of farming | 220 |
| VI.A.2. Dark burnished wares | 224 |
| VI.A.3. Changes during the Chalcolithic period in the Balkans and explanatory models for Turkish Thrace | 225 |
| VI.B. THE EXPLANATION OF THE SIMILARITIES IN MATERIAL CULTURE BETWEEN THE BALKANS AND ANATOLIA | 231 |
| VI.C. THE ROLE OF TURKISH THRACE BETWEEN THE BALKANS AND ANATOLIA | 235 |

CHAPTER VII. CONCLUSIONS **238**

APPENDICES **244**

Appendix 1. Turkish Thrace Field Record Form.

Appendix 2. Turkish Thrace Grid Collection Form.

Appendix 3. PLATES.

BIBLIOGRAPHY

LIST OF FIGURES AND TABLES

FIGURES

Fig.I.1. Map showing the topographic features of Turkish Thrace.

Fig.I.2. Climatic diagrams of Edirne.

Fig II.1. Location map of extensive survey areas.

Fig.II.2. Geological map of the Edirne province.

Fig.II.3. Schematic model of surface survey method in the Edirne region.

Fig.II.4. Relative ground visibility of fields in the Kavakli-Ortakçi area.

Fig.II.5. Distribution of sites and off-site finds in the Kavakli-Ortakçi area.

Fig.II.6. Relative ground visibility of fields in the Tepeyani-Bağlarıçi area.

Fig.II.7. Distribution of sites and off-site finds in the Tepeyani-Bağlarıçi area.

Fig.II.8.a. Kavakli 1; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.

Fig.II.8.b. Interpolated contour plan of Kavakli 1: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

Fig.II.8.c. Interpolated contour plan of Kavakli 1: Pottery weight.

Fig.II.9.a. Tepeyani; (a-b) absolute sherd counts (c) chipped stone counts (d) sketch plan of sampled area.

Fig.II.9.b. Interpolated contour plan of Tepeyani: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).

Fig.II.9.c. Interpolated contour plan of Tepeyani: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

Fig.II.9.d. Interpolated contour plan of Tepeyani: Pottery weight.

Fig.II.10.a. Hamaylitarla; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.

Fig.II.10.b. Interpolated contour plan of Hamaylitarla: Early Neolithic sherd distribution (density of sherds per 100 m²).

Fig.II.10.c. Interpolated contour plan of Hamaylitarla: Pottery weight.

Fig.II.11.a. Yumurta Tepe; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.

Fig.II.11.b. Interpolated contour plan of Yumurta Tepe: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

Fig. II.11.c. Interpolated contour plan of Yumurta Tepe: Pottery weight.

- Fig.II.12.a. Kavakli 2; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.
- Fig.II.12.b. Interpolated contour plan of Kavakli 2: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).
- Fig.II.12.c. Interpolated contour plan of Kavakli 2: Pottery weight.
- Fig.II.13.a. Yağcili; (a) absolute sherd counts. (b) chipped stone counts.
- Fig.II.13.b. Yağcili; (c) daub fragments count. (d) sketch plan of sampled area.
- Fig.II.13.c. Interpolated contour plan of Yağcili: Late Neolithic (Karanovo III-IV) sherd distribution (density of sherds per 100 m²).
- Fig.II.13.d. Interpolated contour plan of Yağcili: Pottery weight.
- Fig.II.14.a. Arpaç / Kaynaklar; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.
- Fig.II.14.b. Interpolated contour plan of Arpaç / Kaynaklar: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).
- Fig.II.14.c. Interpolated contour plan of Arpaç / Kaynaklar: Pottery weight.
- Fig.II.15.a. Köprübaşı; (a-b) absolute sherd (Karanovo III and Çardakalti) counts.
- Fig.II.15.b. Köprübaşı; (c) absolute chipped stone counts (d) sketch plan of sampled area.
- Fig.II.15.c. Interpolated contour plan of Köprübaşı: Middle Neolithic (Karanovo III) sherd distribution (density of sherds per 100 m²).
- Fig.II.15.d. Interpolated contour plan of Köprübaşı: Late Neolithic (Çardakalti) sherd distribution (density of sherds per 100 m²).
- Fig.II.15.e. Interpolated contour plan of Köprübaşı: Pottery weight.
- Fig.II.16.a. Değirmençeşme; (a) absolute sherd counts (b) chipped stone counts (c) sketch plan of sampled area.
- Fig.II.16.b. Interpolated contour plan of Değirmençeşme: Prehistoric sherd distribution (density of sherds per 100 m²).
- Fig.II.16.c. Interpolated contour plan of Değirmençeşme: Pottery weight.
- Fig.III.1. Neolithic and Chalcolithic Settlements in Turkish Thrace.
- Fig.III.2. Topographical variation of Prehistoric settlements in the Edirne region.
- Fig.III.3. Prehistoric settlements in the Tunca basin. (Scale of map: 1:25,000).
- Fig.III.4. Prehistoric settlements in the Süloğlu basin. (Scale of map: 1:25,000). The box indicates area of intensive transect survey.
- Fig.III.5. Prehistoric settlements in the Southern foothills of the Istranca Mountains (Scale of map: 1:25,000). The box indicates area of intensive block survey.

- Fig.III.6. Distribution of Prehistoric settlements in the Edirne region.
- Fig.III.7. Prehistoric settlements in the Edirne region by period.
- Fig.III.8. Site size vs. highest sherd density in settlements of the Edirne region.
- Fig.III.9. Models of “Restricted” mobility (left) and “Extensive” mobility (right).
- Fig.III.10. Location map of prehistoric settlements in the Kırklareli and the Drama regions.
- Fig.III.11. The catchment and exploitation territory of Kavaklı 2.
- Fig.III.12. EBA settlements in Tunca basin. 2.5 km radius territories modified by use of Thiessen Polygons.
- Fig.III.13. EBA settlements in Tunca basin. 2.5 km radius territories modified by using the Landscape model.
- Fig.IV.1. Early Neolithic pottery from Hamaylitarla.
- Fig.IV.2. Middle Neolithic (Karanovo III-Vesselinovo) pottery from Altıağaç.
- Fig.IV.3. Middle Neolithic (Karanovo III-Vesselinovo) pottery from Köprübaşı, Altıağaç and Gavurdere.
- Fig.IV.4. Late Neolithic (Karanovo III-IV) pottery from Yağcılı.
- Fig.IV.5. Late Neolithic (Karanovo III-IV) pottery from Yağcılı.
- Fig.IV.6. Late Neolithic (Kalojanovec) pottery from Yağcılı and Köprübaşı.
- Fig.IV.7. Late Neolithic (Çardakaltı) pottery from Avariz / Kumocağı.
- Fig.IV.8. Late Neolithic (Çardakaltı and Kalojanovec) pottery from Avariz / Kumocağı.
- Fig.IV.9. Late Neolithic (Çardakaltı) pottery from Avariz / Kumocağı and Köprübaşı.
- Fig.IV.10. Late Neolithic (Maslidere) pottery from Altıağaç and Değirmençeşme.
- Fig.IV.11. Late Neolithic (Maslidere) pottery from Gavurdere and Altıağaç.
- Fig.IV.12. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavaklı 2, Kocatepe and Karabaş.
- Fig.IV.13. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani and Karabaş.
- Fig.IV.14. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavaklı 2, Tepeyani and Karabaş.
- Fig.IV.15. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Kocatepe and Karabaş.
- Fig.IV.16. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Yumurta Tepe and Karabaş.
- Fig.IV.17. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavaklı 2, Kocatepe, Tepeyani, Yumurta Tepe and Karabaş.

- Fig.IV.18. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavakli 2, Kocatepe, Arpaç and Karabaş.
- Fig.IV.19. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Yumurta Tepe and Karabaş.
- Fig.IV. 20. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Yumurta Tepe.
- Fig.IV.21. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Yumurta Tepe.
- Fig.IV.22. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Tepeyani.
- Fig.IV.23. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Tepeyani and Kavakli 1.
- Fig.IV.24. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Kavakli 1.
- Fig.IV.25. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Karabaş.
- Fig. IV.26. Chalcolithic (Karanovo VI- Gumelniţa) pottery from Karabaş.
- Fig.IV.27. A hierarchical classification system for the designs on Kocatepe pottery.
- Fig.IV.28. Complex designs on Maslidere pottery.
- Fig.IV.29.a. Distribution of rim diameters for Early Neolithic (Hamaylitarla) pottery.
- Fig.IV.29.b. Distribution of rim diameters for Middle Neolithic (Karanovo III) pottery.
- Fig.IV.29.c. Distribution of rim diameters for Late Neolithic (Karanovo III-IV) pottery.
- Fig.IV.29.d. Distribution of rim diameters for Late Neolithic (Çardakalti) pottery.
- Fig.IV.29.e. Distribution of rim diameters for Chalcolithic (Kocatepe) pottery.
- Fig.IV.29.f. Distribution of rim diameters for Chalcolithic (Karanovo VI) pottery.
- Fig.IV.30. Neolithic chipped stone implements from Yağcili, Avariz / Kumocağı and Köprübaşı.
- Fig.IV.31. Chalcolithic chipped stone implements from Yumurta Tepe, Tepeyani, Kavakli 1 and Kavakli 2.
- Fig.IV.32. Yağcili width vs. length (cm) of blade specimens.
- Fig.IV.33. Kavakli 1 width vs. length (cm) of blade specimens.
- Fig.IV.34. Tepeyani width vs. length (cm) of blade specimens.
- Fig.IV.35. Yumurta Tepe width vs. length (cm) of blade specimens.
- Fig.IV.36. Stone Axes from Yumurta Tepe, Karabaş, Kavakli 2 and Köprübaşı.
- Fig.IV.37. Stone Axes from Yağcili.
- Fig.IV.38. Stone Axes from Yağcili, Köprübaşı and Kavakli 1.
- Fig.IV.39. Location of axe factories in the Şarköy region.
- Fig.IV.40. Figurines from Yağcili and Tepeyani. A cult table from Kocatepe.
- Fig.IV.41. Figurines from Yağcili, Tepeyani, Avariz / Kumocagi, Kocatepe and Arpaç.
- Fig.V.1. Calibrated dates of the Fikirtepe Culture.

- Fig.V.2. Calibrated dates of Hoca Çeşme.
- Fig.V.3. Calibrated dates of Karanovo I and II.
- Fig.V.4. Distribution of Neolithic Settlements in Western and North-Western Anatolia.
- Fig.V.5. Calibrated dates of Toptepe.
- Fig.V.6. Neolithic and Chalcolithic settlements in Anatolia mentioned in the text.
- Fig.V.7. Comparative materials from Anatolia.
- Fig.V.8. Relief map of the Balkans, showing selected sites.

TABLES

- Table I.1. Research design.
- Table I.2. Cultural sequence of the Balkans.
- Table I.3. Temperature and Rainfall for Edirne (1900s data).
- Table IV.1. Ware types of Karanovo III-IV pottery.
- Table IV.2. Ware types of Pre-Cucuteni / Maritsa (= Kocatepe) pottery.
- Table IV.3. Ware types of Karanovo VI / Gumelnița pottery.
- Table IV.4. Forms of Early Neolithic (Hamaylitarla) pottery.
- Table IV.5. Forms of Karanovo III-Vesselinovo pottery.
- Table IV.6. Forms of Karanovo III-IV pottery.
- Table IV.7. Forms of Çardakalti pottery.
- Table IV.8. Forms of Maslidere pottery.
- Table IV.9. Forms of Pre-Cucuteni / Maritsa (=Kocatepe) pottery.
- Table IV.10. Forms of Karanovo VI / Gumelnița pottery.
- Table IV.11. Wares and forms of Karanovo III-IV pottery.
- Table IV.12. Wares and forms of Pre-Cucuteni / Maritsa (=Kocatepe) pottery.
- Table IV.13. Wares and Forms of Karanovo VI / Gumelnița pottery.
- Table IV.14. Flint types of Yağcılı chipped stone assemblages.
- Table IV.15. Flint types of Avariz / Kumocağı chipped stone assemblages.
- Table IV.16. Flint types of Köprübaşı chipped stone assemblages.
- Table IV.17. Flint types of Kavaklı 1 chipped stone assemblages.
- Table IV.18. Flint types of Tepeyani chipped stone assemblages.
- Table IV.19. Flint types of Yumurta Tepe chipped stone assemblages.
- Table IV.20. Distribution of axe types by sites.
- Table V.1. Radiocarbon Dates of the Fikirtepe Culture.

Table V.2. Radiocarbon Dates of Hoca Çeşme.

Table V.3. Dates of Töptepe.

Table V.4. Cultural sequence of the Balkans, Anatolia and Turkish Thrace.

Declaration

No material contained in this thesis has previously been submitted for a degree in this or any other University

Statement of Copyright

The copyright of this thesis rests with the author.
No quotation from it should be published without their prior written consent and information derived from it should be acknowledged.

PREFACE

I have been working in Turkish Thrace since 1991. In 1991, I started an MA at University College London, Institute of Archaeology, and I completed it in 1993 with a dissertation about Early Prehistoric sites in Eastern Thrace. In 1992, during my visit to the Edirne region, a villager in Hasköy showed me some pottery which he found them in his field. These were typical of Gumelnița-type pottery that was hitherto a missing link in the pottery sequence of Turkish Thrace. At that time, I thought the Edirne region was the most promising area to understand relationships between the Balkans and Turkish Thrace. A new archaeology department founded in Edirne, and I started to work in the University of Thrace as a research assistant. First of all, I have worked on prehistoric materials from Çardakli and Altiağaç that were stored in the Edirne museum. Çardakli and Altiağaç materials were different from any known Balkan pottery sequences. In 1995, I started to surface survey in the Edirne region, and I discovered some very important finds, especially those belonging to the Chalcolithic period. Enthusiastic about the significance of these materials and wishing to introduce it to the literature as quickly as possible, I did not hesitate to publish our findings as surface material (e.g. Erdoğan 1995 ; 1997; 1999a ; 1999b; 1999c). In the same year, Prof. M. Özdoğan offered me a position on the Marmara and Thrace Regional Research Project of Istanbul University. I joined the Asagi Pinar and Kanlıgeçit excavations in the Kırklareli region. When I started my doctoral work at the University of Durham, Dr. J. Chapman and Dr. J. Bintliff advised me to use intensive survey techniques in the Edirne region. Dr. I. Fazlıoğlu of the University of Thrace permitted me to join a collaborative project. This project provided important evidence relating to past land use and settlement systems. The main aim of my doctoral thesis is to explain developments in Turkish Thrace during the Neolithic and Chalcolithic periods. Examination settlements and artefacts and to define prehistoric cultures of Turkish Thrace, and to identify similarities between the Balkan cultures and Turkish Thrace.

I wish to express my deepest thanks to Dr. John Chapman, under whose supervision this thesis has been done. I also wish to thank him for his unceasing guidance, help and support of my changing vision of archaeology. I also wish to thank Prof. Anthony Harding for his valuable advice.

Special thanks are due to Dr. Ismail Fazlıoğlu of the University of Thrace. Without his interest and help the intensive surface work would not have been possible. He also supported our survey work by providing his student support. I would like to thank his students, namely Levent Çimen, Yavuz Babaçoğlu, Ahmet Aydın and Demet Uğraş.

During my work, I visited Bulgaria twice, once to attend the Karanovo symposium and once to visit museums. In Bulgaria, my thanks go to Prof. Ivan Gatsov who organized

a trip to Pernik, Kyustendil and Blagoevgrad to see prehistoric materials from sites such as Gâlâbnik, Krainitsi and Kovachevo etc. He also clarified many points on chipped stone research. Many thanks also go to Bisserka Gaydarska who provided me with Bulgarian publications and translated them.

In 2001, I visited Romania to work on Pre-Cucuteni material. I should like to thank Prof. Dan Monah of the University of Iași, Prof. Dragomir Popovici of the National Museum of History in Bucharest and Dr. Gheorghe Dumitroaia of the Museum of Piatra Neamț make me work possible. It is impossible to forget Prof. D. Monah and Prof. D. Popovici's great hospitality and help. This visit was made possible by grants from the Prehistoric Society, the Graduate Society and the Rosemary Cramp Fund.

To my parents, I owe the greatest debt that I cannot adequately express in words. My wife Rabia provided emotional and intellectual support without which this work would never have been completed.

Finally, I would like to extend my special thanks to all those who have helped in many ways, sometimes over many years. I have included their names in the list below. Any errors, omissions or misquotes etc., of course, remain entirely my own responsibility.

Dr. Işık Şahin, Prof. Nicolae Ursulescu, Prof. Mehmet Özdoğan, Prof. Hermann Parzinger, Lesley Harding, Prof. K. Leshtakov, Dr. Laurens Thissen, Prof. Turan Efe, Dr. John Bintliff, Phill Howard, M. Akif Işin, Valantin Radu, Moise Dragos, Prof. S. Marinescu-Bâlcu, Talat Dalaman, Onur Özbek, Nicola Dorian, The TAY Project, The Edirne Museum, The University of Durham-Department of Archaeology, The Graduate Society, The Prehistoric Society, The University of Thrace-Department of Archaeology.

The research was made possible by generous grants from the Prehistoric Society, the Graduate Society, University of Durham-Department of Archaeology and a Birley Bursary Award.

Burçin Erdoğan
Durham, December 2001

CHAPTER I : INTRODUCTION

I.A. GENERAL INTRODUCTION

I.A.1. Aim of the Research

The main subject matter of this thesis is the material culture of Eastern Thrace (or Turkish Thrace). Daniel saw the material as 'the unwritten remains of the early past of man, the mute, silent witnesses of the origins and early development of prehistory' (Daniel 1962:4-5). Tools, pottery, figurines and buildings etc. - in a word, it was all archaeological material. According to Tilley

'material culture is a framing and communicative medium involved in social practice. It can be used for transforming, storing or preserving social information. It also forms a symbolic medium for social practice, acting dialectically in relation to that practice. Although material culture may be produced by individuals, it is always a social production. This is because it does not seem to be at all fruitful to pursue a view of the human subject as endowed with unique capacities and attributes, as the source of social relations, font of meaning, knowledge and action' (Tilley 1989:189).

This means that archaeological materials in Turkish Thrace have two separate kinds of meaning; functional and symbolic, and they effectively linked whole range of spheres of human activity. The study of material culture is a means to investigate the elements of archaeology. The important thing about material culture is its materiality, its non-ideal qualities that have the values of solidity and durability. Hodder argues that artefacts and buildings play a role in controlling ambiguity (meaning variation), by virtue of the fact that they are 'durable and concrete, restricting variability' (Hodder 1986:151). Material culture performs the role of framing device within wider systems of meaning, a virtual role in reproduction because of its resilience (Yates 1990). As Barrett argues, 'the material world therefore acts as a complex series of "locales" within which meaningful and authoritative forms of discourse can be sustained' (Barrett 1987:8). As physical presence material culture forms a distinctive meaningful scene within society, and thus, for processualist as for post-processualist alike "Archaeology is archaeology is archaeology" (Clarke 1968: 13; Hodder 1986: 1, 174).

Turkish Thrace acts as a land bridge between the Balkans and Anatolia. Along this land bridge it might be expected that there has been transference of ideas, trade and movement of objects or even people between the two regions. The main aim of this thesis is to explain developments in Turkish Thrace during the Neolithic and Chalcolithic periods. This will include an examination of settlements and artefacts and a definition of

prehistoric “cultures” in Turkish Thrace in the Neolithic and Chalcolithic periods, as well as the identification of similarities between Turkish Thrace and Balkan cultures. Arguments about the role of material culture in links between the Balkans and Anatolia have increased recently. One of the aims of this thesis is the investigation of the role of Turkish Thrace as an intermediate zone between the Balkans and Anatolia. The main objectives can be summarised as:

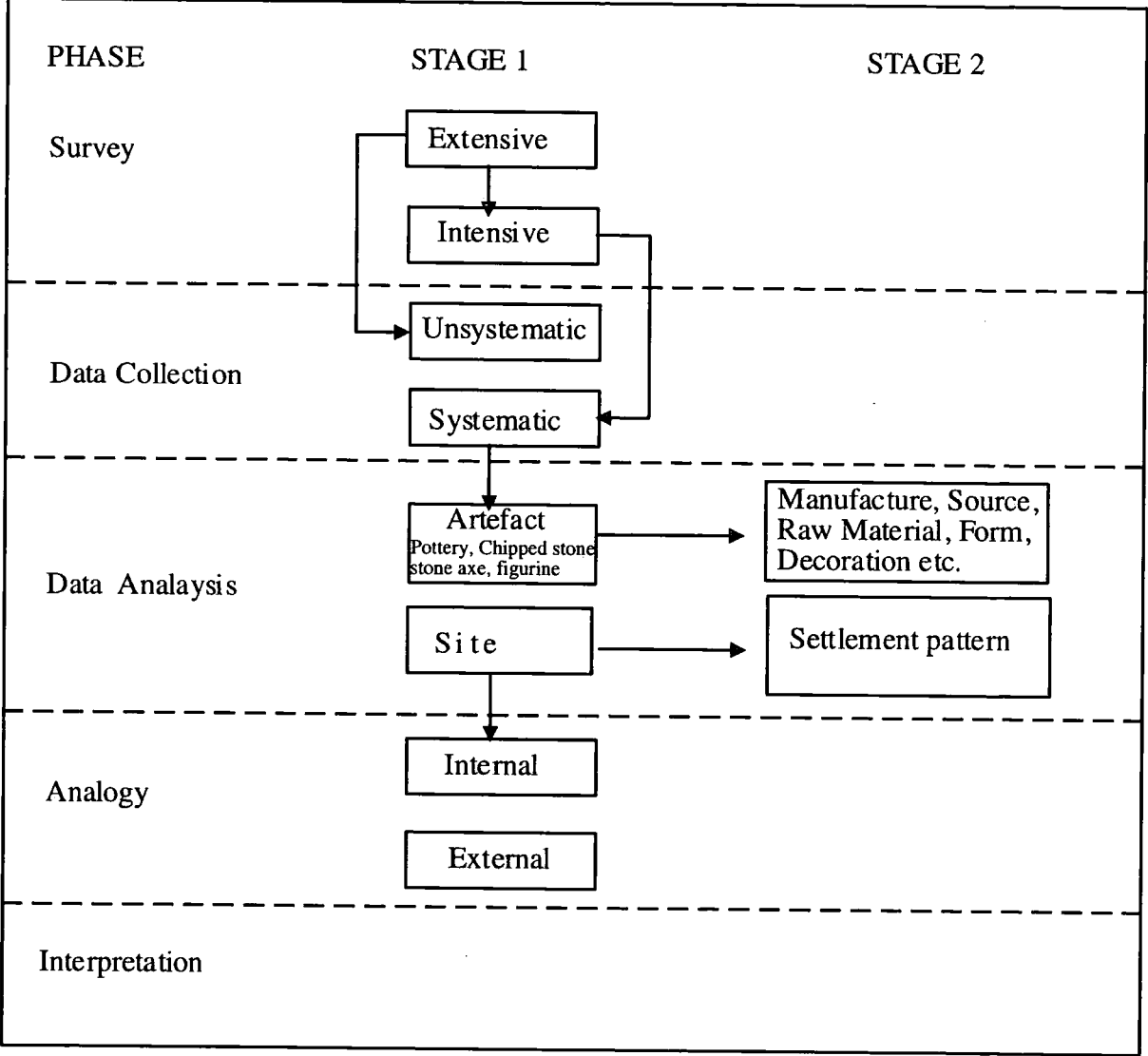
1. Investigation of the prehistoric settlement pattern of Turkish Thrace; the conducting of intensive archaeological survey in a selected region (the Edirne region) and the definition of site and off-site zones. The four basic questions to which intensive field survey can provide at least partial answers have been defined by Cherry, Gamble and Shennan (1978) as: the number of sites in the area, the number of sites by period and function, the relationships between archaeological sites and environmental variables, and the inter-relationships between archaeological sites. Information about the number of sites by period is important for a comprehensive picture of archaeological potential of a region. Their type and function, such as tell or flat settlement, and length of occupation - whether permanent, semi-permanent or seasonal - as well as relationships between site and environment constitute important steps in the analysis of settlement patterns. The inter-relationships between archaeological sites are also important for understanding hierarchical as well as social relationships. Since until now no intensive archaeological surveys have been conducted in Turkish Thrace, this work is unique for the whole region.
2. The investigation of artefacts and identification of exchange items. One of the most important discoveries in Turkish Thrace was the group of stone axe factories in the Şarköy region. So far these axe factories are unique in the prehistoric record of the Balkans and Anatolia. The distribution of stone axes from factories is an important function of the exchange system.
3. The explanation of cultural change in Neolithic and Chalcolithic Turkish Thrace. What was the role of Turkish Thrace in the transition from foraging to farming and what was its role for the origin and spread of dark burnished ware over the Balkans?
4. The recording and investigating Chalcolithic occupation in Turkish Thrace. Chalcolithic occupation of Turkish Thrace was, until now, largely *terra incognita*. Some archaeologists believed that Turkish Thrace was empty in the Late Chalcolithic period. However, our surveys in the Edirne region revealed Late Chalcolithic sites and materials.

5. Investigation of materials similar to Balkan pottery assemblages but located in Anatolia and the explanation of the similarities in material culture between the Balkans and Anatolia.

I.A.2. The Research Design

The research design of this thesis falls into 5 phases: 1. Surface Survey. 2. Data Collection. 3. Data Analysis. 4. Analogy. 5. Interpretation (Table I.1).

Table I.1. Research design.



1. Surface Survey: The main part of thesis is based on surface survey in the Edirne region, Northwestern side of Turkish Thrace. It divided into two stages; extensive and intensive survey.

2. Data Collection: There are two kind of data collection in surface survey; unsystematic and systematic. Extensive survey was conducted in small areas, and artefacts were collected unsystematically. Intensive survey involves two procedures. The first involves the systematic collection of all surface artefacts within a 10x10 m grid across selected settlements. The second off-site survey procedure was designed to systematic investigate the outer perimeter of sites.

3. Data Analysis: It consists of the examination of artefacts - pottery, chipped stone, stone axes and figurines - and settlement pattern.

4. Analogy: To identify similarities not only between the Edirne region material and the other regions in Turkish Thrace but also between the Edirne region material and the Balkan and Anatolian materials.

5. Interpretation: The last phase is interpretation; to establish cultural sequence of Turkish Thrace, to define prehistoric "cultures" of Turkish Thrace in the Neolithic and Chalcolithic periods and to investigation the role of Turkish Thrace between the Balkans and Anatolia.

I.A.3. Terminology and Chronology

There are certain differences in terminology between the Balkans, Greece and Anatolia. In the Balkan terminology, the Early Neolithic correlates to Late Neolithic / Early Chalcolithic period of Anatolia. The Middle Chalcolithic of Anatolia correlates to both Middle and Late Neolithic period of the Balkans, and the Late Chalcolithic of Anatolia correlates whole (early, middle and late) Chalcolithic period of the Balkans. On the other hand, in Greek terminology, the Chalcolithic period generally called the Final Neolithic.

Geographically, Turkish Thrace is a part of the Balkans, and most of Turkish Thrace material is close to the Balkan material. So, in this study, I prefer to use the Balkan terminology. The Fikirtepe settlements are the earliest Neolithic settlements in North-western Turkey, as well as Turkish Thrace. However, they were dated to the Late Neolithic - Early Chalcolithic period in Anatolian terminology. The Karanovo I-II settlements, which were dated the Early Neolithic period in the Balkan terminology, were also found in Turkish Thrace. The Karanovo I-II horizon is more or less contemporary to the late Fikirtepe. Typical Karanovo III and III-IV materials of the Balkans were also found in Turkish Thrace. As these examples shows, using the Balkan terminology for Turkish Thrace prehistory is much more logical (Table I.2).

Table I.2. Cultural sequence of the Balkans.

| Period | Cal.BC. | Principal "Cultures" |
|--------------------|-----------|--|
| Early Neolithic | 6500-5500 | Karanovo I-II; Starčevo |
| Middle Neolithic | 5500-5200 | Karanovo III; Early Vinča; |
| Late Neolithic | 5200-4900 | Karanovo III-IV; Kalojanovec |
| Early Chalcolithic | 4900-4500 | Maritsa; Pre-Cucuteni Sava; Boian |
| Late Chalcolithic | 4500-3800 | Karanovo VI; Gumelnița; Salcuța; Cucuteni |

I.B. PHYSICAL ENVIRONMENT

I.B.1. Topography

Turkish Thrace is bordered on its West side by the Meriç (Marica) River, on its North and East side by the Istranca Mountain range, the Black Sea and Bosphorus, and on its South side by the sea of Marmara and the Dardanelles (Fig.I.1).

The Ergene Basin: The Ergene River rises far to the east as the Çorlu stream near Çerkezköy and flows westward across the centre of Turkish Thrace (Admiralty Handbook 1917: 23). It then skirts the foothills of Southern highland and joins the Meriç River. The undulating flatlands of the Ergene Basin constitute the main central plain of Turkish Thrace. The Ergene River receives numerous tributaries coming down from the Ganos Mountain, and also Koru and Büyükhaci Mountains on the South. The largest stream called Ana, rises between the towns of Keşan and Malkara, and emerges North of the town of Hayrabolu, which gives its lower course a name. From the North, It receives a large number of streams coming from the Istranca Mountains, such as, Süloğlu, Akar, Koca, Şeytan, Poyrali, Ana and Sulucak. The confluence of the Meriç and Ergene Rivers lies in a large flat basin, which today is covered by marshes and rice fields. The region between the Ergene junction and the delta of the Meriç is also marshland. In prehistoric times a deep gulf existed in this part of Turkish Thrace (Göçmen 1976).

The Tunca River is a tributary of the Meriç River, which rises in the Balkan Mountains, descends Southwards, and joins the Meriç River below the town of Edirne. The width of the Tunca is from 25 m. to 40 m. In the dry periods in summer and autumn the river can be crossed in many places (Admiralty Handbook 1917: 20).

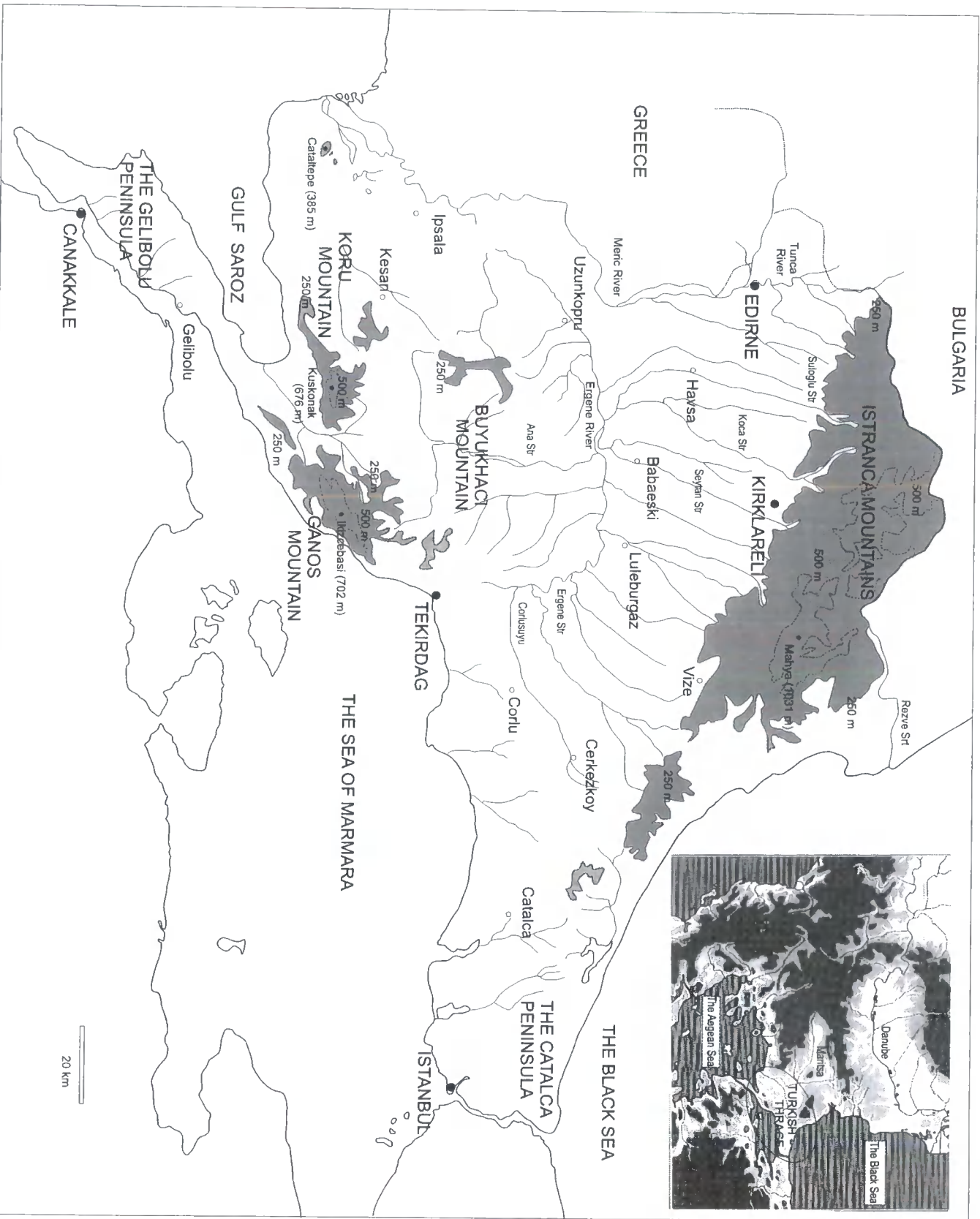


Fig.1.1. Map showing the topographic features of Turkish Thrace.

The Istranca Mountain range: The Istranca Mountain range is the dominant physical feature of Turkish Thrace, which starts from the Çatalca area, continues parallel to the coast of the Black Sea and is connected to the Rhodope massive. Its peak the Mahya reaches a height of 1031 metres. On its South-Western side, the Istranca Mountain consists of gentle slopes. On its North-Eastern side, the ridge throws out an almost continuous series of spurs and hills close to the Black Sea (Admiralty Handbook 1917: 10).

The Black Sea Coast and the Çatalca Peninsula: The Black Sea coast of Turkish Thrace is general exposed, dangerous and inaccessible, cliffed almost throughout its length, and fronted by rocks. The bay of İğneada is encumbered with rocks and reefs, and it is subject to sudden shifts of wind. There is a small quay at the village of İğneada. South of the village the coast backed by hills, is alternately cliffed and broken by patches at their mouths. Cape Seroz projecting eastward, provides shelter from northerly winds, but anchorage is impossible because of the bottom is rocky. The village of Kiyiköy (Midye) lies at the south of Cape Seroz. It stands on the cliff between two valleys; Kazan and Papuç. The creek South of the village gives anchorage sheltered from the North to very small vessels. From Kiyiköy almost to the end of the Çatalca promontory the smooth outline of the coast is unbroken save for the high rocky point of Cape Kastro and the broad cliffed headland of Cape Kara. Short streams from the Northeast slopes of Istranca Mountain range make insignificant breaks in the cliffs. Beyond the village of Podima the cliffs die out and the hills are lower until the Terkos stream. Lake Terkos was pounded back behind the high coast, and collects the water of several smaller valleys besides that of Istranca Mountain (Admiralty Handbook 1942:63). Behind the Çatalca line the country to the Bosphorus is an accidented plateau of fairly uniform heights. It is cut by valleys running parallel to each other from Northwest to Southeast. On the North side of the Sea of Marmara the coast is broken by river mouths, which form deep and safe estuaries (Admiralty Handbook 1917: 13; 1942: 120).

The Northern coast of the Sea of Marmara and the Southwest of Eastern Thrace: From about Tekirdağ on the northern coast of the Sea of Marmara, the hills spread out Westwards and Northwards, forming a broken massive plateau. This plateau is the district of The Ganos, Koru and Büyükhaci Mountains. The Ganos Mountain is extending from Northeast to Southwest, steep towards the sea. Its highest point is İkizcebaşı with an elevation of about 702 metres. Northeastwards it is connected with the Ergene Plateau by low hills (Admiralty Handbook 1942:118). Koru Mountain is separated from the Ganos Mountain by the Kavak valley. Most of the surface forms steep-sided, flat-topped hills. Its highest point - Kuşkonak (676 m.) - lies North of the head of the Gulf of Saroz. Westwards the Koru Mountain sinks into detached hills with the volcanic peak of Çataltepe (385 m.)

overlooking the town of Enez (Admiralty Handbook 1942: 118). Enez stands on the flat marshy delta-plain of Meriç, between the lakes of Dalyan and Gala. The Büyükhaci Mountain lies on the North of Koru Mountain. It consists of a thinly wooded plateau extending Northeastwards from the town of Ipsala. It is enclosed by the angle of the Ergene-Meriç junction on the West, and by the headed-waters of the Ana Stream on the East. On the North it falls in easy slopes to the Ergene valley, and on the South over cultivated ground to the Büyük Stream (Admiralty Handbook 1917: 16).

The Gelibolu Peninsula: The Gelibolu peninsula is also a part of Turkish Thrace, It is a very narrow and long piece of land, runs parallel to the Anatolian coast line, and is connected to the mainland of Thrace by an isthmus that is only 7 km in width (Admiralty Handbook 1917: 17; 1942: 71). The interior of the peninsula is hilly country, cut up by the streams. All the largest streams, except the Kocadere drain to the Dardanelles. The Eastern shores are formed by low cliffs. There are a number of well-protected harbours, such as Akbaş and Gelibolu. The Western shores of the Gelibolu Peninsula are higher than the Eastern side. It is steep and inaccessible except for short beaches at the mouths of the few streams.

I.B.2. Geology

The Istranca Mountain range: The core of the Istranca massive is composed by a coarse grained, pink coloured 'Kirkclareli' gneiss and a thin grained, dark coloured 'Fatma Kayasi' gneiss (Ternek 1987: 55). These are overlain by schists of various lusters, quartzite, metaglomerate and marble. This unit is interlude by rocks of granitic origin. Some pebbles of granite, aplite and quartz were found in the paragneisses at the North of Kirkclareli. Granite block of Demirköy is noteworthy (Kurtur 1978: 10). The gneisses of the core are overlain by phyllite, schist, marble and crystalline limestone in the Çatalca region of the Istranca massive. These are mutually covered by, in the South, conglomerates and sandstones of Devonian age. The clastic rocks of Eocene overlie these units. The oldest sedimentary unit is the Upper Cretaceous flysch in the North. Eocene starts the Çatalca area extending Northwest to the Saray, Pınarhisar, Kirkclareli and Lalapaşa area.

The Ergene Basin: Continental Pliocene and Undifferentiated continental Miocene are fairly widespread in the Ergene Basin. The continental Pliocene in the basin consists of gravel, sand and marls outcropping at hills, slopes and depressions with thicknesses locally exceeding 100 m. Continental Miocene lies unconformable on marine Miocene in some localities and on the marine Oligocene with lignites elsewhere (Ternek 1987).

The alluvial plain of the Meriç River passes seawards into a deltaic plain. This deltaic plain consists of gravel, sand, clay and soil. The Meriç flood plain was studied by Göçmen (1976). During the Holocene, about 10.000 years before present, the rising sea level invaded the Meriç Valley. The river emptied into a deep gulf, perhaps as far inland as the Meriç-Uzunköprü area. The Meriç River filled the gulf with alluvium. Sea level reached its present position about 6000 BP. Alluvial deposition from the River and its tributaries into the gulf increased and the Meriç flood plain formed.

The Ganos and Koru Mountains: The Ganos and Koru Mountains consist of lower flysch at the base, sandstone, conglomerate and limestone at the top. Lower flysch is Upper Eocene-Oligocene in age, intercalated with andesite, basalt and tuffs. Sandstone and limestone are Upper Cretaceous and Lutetian in age. In the Mürefte-Sarköy region, Marine Miocene consists of sandy clays, sandy and micaceous red marls, sandy stones with thin lignite beds and basal conglomerates. There are also chlorite schists and serpentinites of Paleozoic age and some dykes of diorite and aplit (Ternek 1987: 59).

The Northern shore of the sea of Marmara and The Büyükhaci Mountain: The marine Oligocene extending from Çekmece to about 20-25 km West of the town of Keşan along the Meriç River and Büyükhaci Mountain. It is divided into two units. The lower one consists of marls and shales and the upper unit of lignite bearing sandstones. The lignite beds were dated as of Lower and Middle Oligocene. The North of Saroz gulf consists of lagoonal limestones with clay interbeds (Ternek 1987).

The Gelibolu Peninsula: Marine Miocene is observed as fairly outcrops on both sides of the Peninsula. Miocene units are Sarmation age, and they are represented by macra limestone, sandstone, conglomerate, clay and marl on the top, and marine limestone, basal conglomerate and sandstone on the bottom. Eocene outcrops on the West coast of the peninsula. Continental Oligocene outcrops also on the West. Continental Pliocene is seen mainly on the Southern part (Ternek 1987).

I.B.3. Climate, Temperature and Soil

In Turkish Thrace, the climate is generally cool with moist winters and dry, hot summers. Certain climate differences can be observed in various parts. On the Black Sea coast the climate is sub-Mediterranean. The Edirne-Kirklareli region has a meso-Mediterranean, while in the Tekirdağ and Istanbul areas the climate is thermo-Mediterranean. There is a considerable temperature range, with January means below 2C° and July means above 25C°. Turkish Thrace is strongly influenced by winter depressions

which pass frequently through the straits, but northerly winds of summer are much drier than along the Black Sea coast (Dewdney 1971). Consequently, total precipitation is much less, ranging from some 900 mm in the mountains to less than 600 mm in the Ergene Basin, and a larger proportion falls in the winter months. Summer rainfall occurs in short. June and August together have an average of only 11 days with rain. The mean temperatures and the average annual rainfall in Edirne can be seen in Table I.3. All information comes from the beginning of the 20th century (Yordanov 1938-39). However, starting from 1960s summer temperatures become higher, and winter temperatures become lower, and summers are much more rainy (e.g. Dewdney 1971).

Table I.3. Temperature and Rainfall for Edirne (1900s data).

| | J | F | M | A | M | J | J | A | S | O | N | D | |
|-----|-----|-----|-----|------|------|------|------|------|------|------|------|-----|----|
| Ed. | 3.3 | 2.5 | 7.6 | 11.4 | 16.3 | 21.3 | 23.8 | 23.3 | 19.0 | 14.7 | 10.2 | 4.8 | C° |
| | 43 | 46 | 24 | 58 | 49 | 29 | 21 | 10 | 35 | 81 | 54 | 94 | mm |

When we compare between the Edirne region and its neighbour, the Yambol-Drama region; in the Yambol-Drama region, summers are much more rainy than the Edirne region, and in the Edirne region, temperatures are slightly higher than the Yambol-Drama region (Fig.I.2).

There is no detailed soil map of Turkish Thrace. In a general soil map, four different soil types can be recognised (Dewdney 1971; Oakes 1958). 1. Red and grey brown podsolic soils with brown forest soils, located in the Istranca Mountains to the North. 2. Non-calcic brown soils with rendzinas and grumsols. It developed mainly under a Mediterranean climatic regime. The greater part of Turkish Thrace was covered by this soil. Brown soils with grumsols are dominant and in the lowland of Turkish Thrace they provide good agricultural land. 3. Alluvial soils. The Meriç and Ergene river valleys are covered by alluvial soils. 4. Alluvial hydromorphic soils. The basic features of these soils are their poor drainage. Only limited cultivation is possible. The Tunca River and the tributaries of the Ergene and the Meriç Rivers are covered by these types of soils.

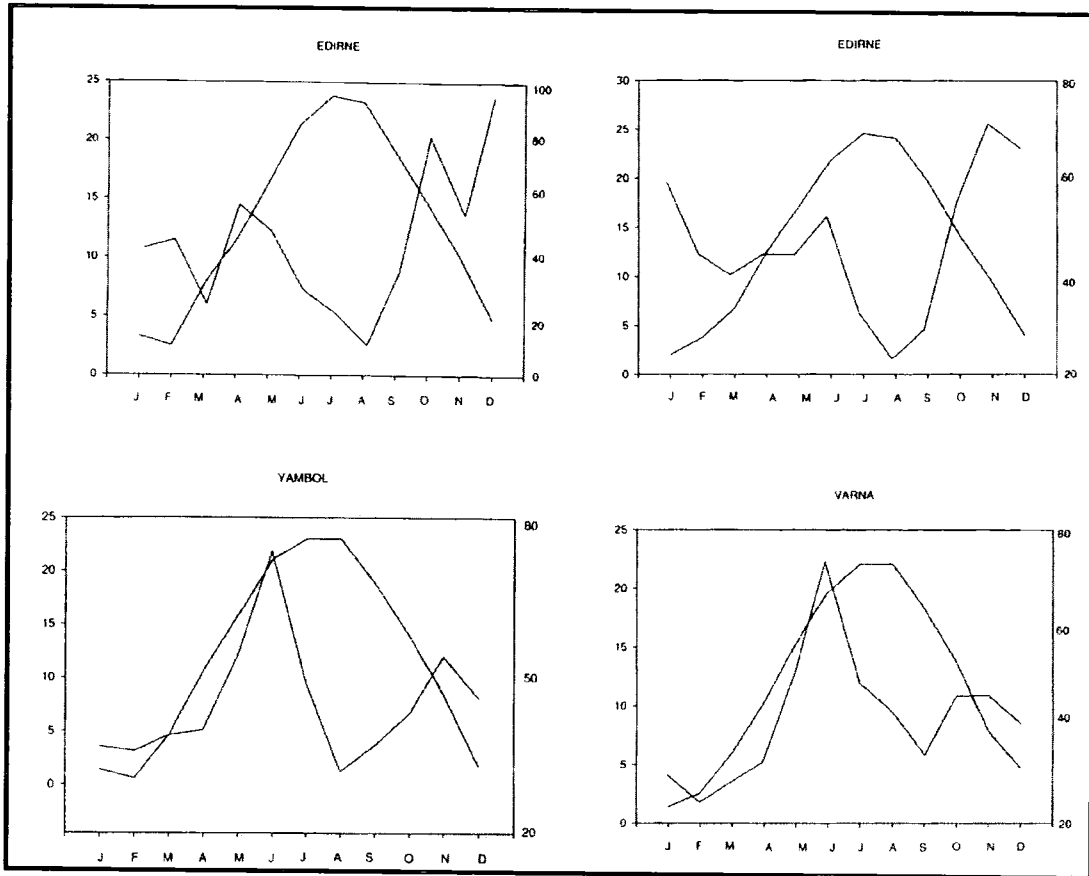


Fig.I.2. Climatic diagrams of Edirne (1900s data on the left, 1970s data on the right) Yambol and Varna. Letters refer to alternate months. Temperature (C°) on the left and precipitation (mm) on the right side of diagrams.

I.B.4. Natural Resources

Copper occurs in Istranca Mountains, in the Kırklareli region. There are important deposits in the areas of Dereköy, Şükrüpaşa and Armutveren on the Bulgarian border (Gültekin 1999). The Istranca Mountains also potential sources for lead-copper (Ternek 1987). However, there is no evidence for prehistoric mining.

Iron occurs in the Istranca Mountains. There are important iron deposits in the Kırklareli region, the area around Demirköy.

A thick tuff horizon around Taslimüsellim village in the Edirne region may be suitable for coarse wares (Ternek 1987). Clay deposits have also been found around Istanbul, near villages such as Ağacli, Kilyos and Sariyer. There are high-alumina clay deposits at Ağlamişbaba Tepe near Kilyos-Istanbul (Ternek 1987). Kaolinite occurs in Dereköy, North of the town of Kırklareli. There are feldspar deposits at Vize in the Kırklareli region, and raw materials suitable for tile making in the village of Sütluce in the

Gelibolu Peninsula. However, again there is no evidence for prehistoric use of these sources. Graphite occurs in Çatalca, Domuzderesi (Ternek 1987). The Island of Gökçeada is a potential area for silver.

I.B.5. Vegetation

The whole the Istranca Mountain from Northwest to Southeast is covered in forest, except in the valleys and on the highest peaks. The wood is mainly beech (*Fagus orientalis*) and different kind of oak (*Quercus hungarica* Hubeny, *Quercus cerris* L., *Quercus dschorochensis* and *Quercus pubescens* Willd), and a certain amount of hornbeam (*Carpinus betulus*) (Kantarci 1974 ; Dönmez 1972). The Istranca Mountain is also colonized by *Rhododendron ponticum*, *Ilex aquifolium* and *Erica verticillata* Forsk.

The Northern part of the Çatalca peninsula from Lake Terkos to the Bosphorus lies the Belgrat Forest. The forest consists of mainly oak (*Quercus dschoroshensis*) and chestnut (*Castanea sativa* Mill.) with beech (*Fagus orientalis*), hornbeam (*Carpinus betulus*) and some pine and Lime (Kantarci 1974: 298 ; Dönmez 1972). The Çatalca peninsula is also colonized by strawberry tree (*Arbutus unedo*), *Phyllirea latifolia*, *Laurus nobilis* and *sapartium Junceum*.

The Ganos and Koru Mountains in the Southern part of Eastern Thrace are covered mainly by different kind of Oaks (*Quercus pubescens* Wild, *Quercus coccifera* and *Quercus cerris*), Red- Pine (*Pinus brutia* Henry) and *Phyllirea lotifolia* (Kantarci 1974). The Büyük Hacı Mountain is marked with some patches of oak wood (*Quercus pubescens*, *Quercus infectoria* and *Quercus huncarica* Hubeny) and *Phyllirea latifolia* (Kantarci 1974:307). The trees do not grow to any great height.

Most of the Gelibolu Peninsula is covered by forest. The trees are mainly red-pine (*Pinus brutia* Henry) oak (*Quercus coccifera*, *Quercus pubescens* Willd and *Quercus infectoria*), *Phyllirea latifolia*, *Arbutus andrachnae* and *Cistus* sp. (Kantarci 1974: 302-303; Dönmez 1972).

The undulating flatlands of the Ergene basin, which constitute the main central plain of Turkish Thrace are densely cultivated. Wheat and sunflowers are cultivated almost throughout Turkish Thrace. Heath, beet, sesame, corn and watermelon are also cultivated in various parts of Turkish Thrace. Rice is cultivated in the Meriç and Ergene basins. Wine is produced in the Tekirdağ region.

There are as yet no pollen diagrams in Turkish Thrace. Hence, we do not know about past vegetation for Turkish Thrace. On the other hand, pollen diagrams from Macedonia, North-Eastern Black Sea and North-Western Anatolia may help us to reconstruct the past vegetation.

The pollen diagram from Philippi in the plain of Drama in Macedonia shows that, ca. 6500-2500 cal. BC, the Philippi region was thickly covered by a mixed-oak forest, probably comprising a mosaic of slightly different kinds of woodland with stands mainly of oak on heavier soils, elm and lime on damper land with perhaps some glades where trees had fallen giving sufficient light for the growth of hazel and ash. The mountain slopes may have had a thinner vegetation of mainly hornbeam and hazel. There is little sign of any vegetation other than natural undisturbed woodland (Greig and Turner 1974).

Paleoecological information was available after 8000 cal. BC for Lake Durankulak (Božilova and Filipova 1986) and Lake Varna (Božilova and Filipova 1975 ; Popova and Božilova 1992) and after 5000 cal. BC for lake Sabla (Božilova and Filipova 1986) in North-Eastern Black Sea. In the Northern Black sea coastal area, especially the Dobrudza for the period of 8000-6000 cal. BC., steppe vegetation was dominant, composed of different herbs such as *Asteraceae*, *Lamiaceae*, *Apiaceae*, *Rubiaceae* and *Fabaceae* families. Trees were low in number. *Corylus* (hazel), *Fagus* (beech), *Quercus* (oak), *Tilia* (lime) *Ulmus*, *Betula* (hornbeam) and *Pinus* (pine) had occupied the ravines and the lower terrains, where they had been preserved from strong dry winds (Popova and Božilova 1992). Since 6000 cal. BC, certain changes occurred in the character of the vegetation but the xerothermic steppe communities still prevailed. The trees started to increase, especially oak, elm, lime and alder. Ash, oriental hornbeam and manna-ash appeared, while many grasses still continued. The vegetation during the Early Bronze Age ca. 3000 cal. BC remained a forest-steppe.

The ecological conditions were different in the region of Varna and the Southern coastal areas. Forest cover was apparent the beginning of the Holocene. Dry and sandy soils were colonized by *Corylus*, *Quercus*, *Ulmus* and *Tilia*. The first signs of deforestation of the oak forest occur in the 4th millennium BC (Popova and Božilova 1992). Oriental beech and hornbeam had occupied the valleys and the northern slopes of the plateau. The forests surrounding Lake Varna during the Early Bronze Age ca 3000 BC were composed by mainly oak, while pine is poorly preserved (Božilova and Filipova 1975). Similar development can also be seen in a pollen diagram from Lake Arkutino, South of Burgas (Božilova 1986).

The results from both macro-fossil and pollen analysis of samples from Luna Reka in the Harmanli region, Southeast Bulgaria suggest that, during the Chalcolithic period (ca. 4900 - 5000 cal. BC.) this region was covered by grasses, mostly *Asteraceae*, and trees such as oak, elm, ordinary or oriental hornbeam, hazel and corneal tree (Lazarova and Stefanova 1997).

In North-Western Anatolia, the only pollen diagram comes from the former lake of Yenisehir. There are as yet no C14 dates, however, According to Bottema and Woldring (1993:11) the time period covers at least 10.000 years. Five zones based on characteristic

changes are made. The earliest zone 1 occurs mainly *Chenopodiaceae* and *Artemisia*. Zone 2 has mainly *Corylus* (Hazel), *Fagus* (Beech), *Quercus* (oak), *Tilia* (Lime) and *Ulmus*. Zone 3 is characterised by increasing *Pinus* (Pine). *Fagus* and *Quercus* are also dominant. *Centaurea solstitialis* type is low. In Zone 4, *Centaurea solstitialis* type has values up to 40%. Zone 5 has mainly *Fagus*, *Quercus*, *Juglans* and *Olea*. *Centaurea solstitialis* type has low percentages.

It seems likely that, during the Chalcolithic period the upper Ergene basin in Turkish Thrace was covered by oak, elm, hornbeam, hazel and corneal trees, while the Black Sea Littoral area was covered by oak, hornbeam and beech trees. During the Early Bronze Age, the Black sea Littoral of Turkish Thrace was composed mainly oak.

I.B.6. The Coastal Morphology of the Black Sea and the Sea of Marmara

Changes in the coastal morphology of the Black Sea and the Sea of Marmara are also related to the settlement pattern of Turkish Thrace. The Black sea is linked to the Aegean by the Sea of Marmara and two small straits; Dardanelles and Bosphorus. During the regression periods of the Mediterranean in the Pleistocene, the straits were blocked by land, thus the Black Sea and the Sea of Marmara were no more than fresh water lakes with considerably lower levels than today (Erinç 1954; Deuser 1972; Gunterson and Özturgut 1974; Stanley and Blanpied 1980; Özdoğan 1985b). The first intrusion of warm and saline waters from the Aegean to the Sea of Marmara took place in the 6th millennium BC, soon to be followed by the establishment of a link with the Black Sea, that lasted until the sea level was 3 to 5 m higher than today. On the base of the core samples from the Sea of Marmara, Stanley and Blanpied argued that

‘Between 9500 and 7500 BP... The continued eastward overflow of saline Mediterranean water across the Dardanelles spread along density interfaces in the Eastern Marmara basin, and water above the bottom remained partially, and at times completely, euxinic. The continued rapid eustatic sea-level rise during this period also enabled minor amounts of Mediterranean waters to cross the Bosphorus and overflow into the Black Sea.’ (Stanley and Blanpied 1980: 539).

The alternating growth and shrinkage of ice sheets probably resulted in changes in the coastal morphology of the Black Sea and the Sea of Marmara (van Andel 1989). There is also empirical evidence of climate change and tectonic activity (Macklin et al. 1995).

The recent work of Ryan and Pitman in the Black Sea indicates that, about 7500 years ago, the sea-level of the Black Sea rose suddenly. Radiocarbon dating of the shells of the first salt-tolerant molluscan invaders from the Mediterranean yielded the age of ca.

7550 BP (Ryan and Pitman et al. 1997)¹. But some researchers argue that Ryan and Pitman date the flood to the same radiocarbon age as the first sediments laid down after the flooding, which were black and organic-rich and therefore formed in conditions lacking oxygen. Thus the flooding may in fact have occurred earlier (Kerr 1998: 1132). The recent investigations in the Gulf of Izmit show that the initial connection between the Black Sea and the Sea of Marmara could have been through the Izmit-Sapanca Basin, and not through the present Bosphorus (Meriç 1995; Özdoğan in press). This channel was blocked by the rapid advance of the Sakarya delta during the beginning of the 4th millennium BC (Stanley and Blanpied 1980: 541). What happened later is not clear, but the archaeological evidences from Bulgaria and Western Georgia indicate that the Black Sea had a considerable regression between 4850 and 4000 BP (Draganov 1995; Shilik 1997: 117). Along the Bulgarian coast of the Black Sea about 12 submerged sites dating from the Chalcolithic to the Early Bronze II period have been found at the depth of 4 to 8 m below present sea-level (Draganov 1995; Özdoğan in press). At Calchis in Western Georgia, a sample of peat from a depth of 8-8,5 m has been radiocarbon dated to 4130 BP (Shilik 1997: 117). All these evidences indicate that during the end of the 3rd millennium BC the coastal morphology of the Black Sea changed, because of a sudden rising of sea level. The archaeological evidences from the western Georgia show that after the end of the 3rd millennium BC, changing of the sea-level of the Black Sea still was continuous (Shilik 1997). Evidence from the bottom sediments of both the Black Sea and the Sea of Marmara indicated that the present conditions were established only by the 1st millennium BC. (Stanley and Blanpied 1980: 541; Özdoğan 1997: 29).

To summarize; on the basis of growth and shrinking of ice sheets in the North, the coastal morphology of the Black Sea and the Sea of Marmara changed. Climate changes may also be related to changes in the coastal morphology. In the 6th millennium BC, sea-level of the Black Sea and the Sea of Marmara rose suddenly. Probably the natural environment of the region totally changed. Another important regression happened in the end of the 3rd millennium BC. Changing of the sea-level of the Black Sea and the Sea of Marmara continued until the 1st millennium BC.

I.C. HISTORY OF INVESTIGATIONS

I.C.1. Previous Researches in Turkish Thrace

The earlier archaeological investigations in Turkish Thrace began in the late nineteenth century with an excavation carried out at the mound of Karaağaçtepe in the

¹ In 1998, W. Pitman and W. Ryan have published a book called Noah's Flood. However, I was not able to see this book. But I believe that their argument on this book is same as their article.

Gelibolu peninsula by H. Schliemann in 1882. Schliemann believed the mound was the tumulus of Protesilaos who was a Trojan War hero. A small trench was excavated to a depth of 2.5 m from the surface (Schliemann 1884: 286-95). In 1921-23, the French occupation forces conducted an excavation on the mound under the direction of R. Demangel. As a result of excavation, an archaeological deposit of about 11.5 m, contemporary with Kumtepe Ib, Troy I and II was discovered (Demangel 1926). The stratigraphic evidence of Karaağaçtepe is not reliable, since it was excavated under conditions prevailing in the 1920s.

The first attempt to study the prehistory of Turkish Thrace was made in the late 1930s by A.M. Mansel, whose declared aim was to investigate the tumuli of the region (Mansel 1938). His brief account of excavation at the tumulus of Alpullu has yielded some prehistoric materials, which probably come from a settlement under the tumulus (Mansel 1938: 22-23). Mansel tried to find some similarities between Alpullu pottery and the Central European Early Bronze Age materials (today Alpullu is dated to the Late Neolithic period).

After a hiatus of 20 years, a number of sites were noted on the Northern shores of the Sea of Marmara and the Gelibolu Peninsula by D. French in the 1960s, whose surface evidence gave pottery similar to that of the Bronze Age sequences of Troy (French 1964; 1965a; 1966). In the same years, Ş.A. Kansu undertook a small-scale excavation at the site of Çardakalti-Edirne (Kansu 1963). Çardakalti material was different from any known Anatolian and Bulgarian pottery sequences. In 1964-65, Ş. A. Kansu, K. Kökten and N. Dolunay made a small sounding at Yarimburgaz Cave-Istanbul, finding Chalcolithic material (Kansu 1972).

The first serious archaeological research in the region, however, was started in 1980 by the Prehistory Department of the University of Istanbul under the direction of M. Özdoğan. Until 1980, our knowledge of the prehistory of Turkish Thrace came from only 13 poorly documented sites. During his extensive surface surveys in some part of the region, about 300 prehistoric sites ranging in date from the lower Palaeolithic to the Iron Age were discovered. Rescue operations were also conducted at Tilkiburnu, Yarimburgaz Cave, Toptepe and Hoca Çeşme (Özdoğan 1982b; 1998a; Özdoğan et al. 1991). After rescue excavations and the final reports on the extensive survey, new excavations were started at Aşağı Pinar and Kanlıgeçit in the province of Kırklareli by the University of Istanbul and the Archaeological Institute of Berlin in 1993 (Parzinger and Özdoğan 1995; Özdoğan 1998a; Özdoğan et al. 1997). In the same year, a rescue excavation was started at Menekşe Çatağı on the Northern shores of the Sea of Marmara by the Tekirdağ Museum (Özdoğan and Işin 1999; 2000). Our research since 1995 has focused on settlement patterns in the Edirne region and questions regarding mainly the Chalcolithic period in Turkish Thrace (Erdoğu 1997; 1999a).

I.C.2. Previous Survey and Excavation Results in Turkish Thrace

Extensive surface survey and a number of rescue excavations have been carried out within the framework of a major project initiated in 1980 by the University of Istanbul, under the direction of M. Özdoğan. Turkish Thrace was surveyed from 1980 to 1985 (Özdoğan 1982a; 1985a; 1998a), and later, the study area was extended to the Anatolian side of the Marmara region (Özdoğan 1999a). The aims of this project were to establish the prehistoric sequence of Turkish Thrace, to compare similar materials in the Balkans and Anatolia, and to consider various hypotheses on diffusion and evolution. According to traditional diffusionist theory, civilisation, including all inventions, first emerged and developed in the Near East, and then dispersed to Anatolia and Europe (Trigger 1989: 170). During the 1960s and early 70s the general tendency of major schools of archaeology was to refuse diffusionist models, giving way to autonomous development of different geographical regions. According to Özdoğan, Turkish Thrace looked like a promising area to understand how much of the prehistoric European culture derives from Oriental influences and also, to explain the movement of objects and materials, transference of ideas, trade and the migrations of peoples between two continents (Özdoğan 1985a). The results of the research project of the Istanbul University can be divided into two stages; 1. Extensive surface survey results. 2. Rescue excavation results. The extensive survey concentrated on selected areas; the Northern shores of the Sea of Marmara, the Bosphorus region, the Gelibolu Peninsula, the plain of Vize, the Edirne-Kirklareli region and the Meriç-Keşan-Uzunköprü area (Özdoğan 1982a; 1985a). As a result of this survey, about 300 prehistoric sites, ranging in date from the lower Palaeolithic to the Iron Age were recovered. There are as yet no full publications of Özdoğan's survey; so far, we have only the general results of the survey.

Extensive survey results: During 1980-85 surveys, almost all of the Palaeolithic material was recovered from the Terkos-Çekmece area in the Çatalca Peninsula (Özdoğan 1985a: 522; Özdoğan 1982a: 45).

In Eskice Sirti, North of the Büyük Çekmece Lagoon, a Lower Palaeolithic pebble tool chopper and a few rough Clactonian flakes were found (Özdoğan 1983b). Bifacial hand axes of Acheulean type were found some open-air sites, such as Dudullu and Davutpaşa in the Istanbul region (Esin 1992).

The Middle Palaeolithic is marked by the flake tool industry called Mousterian. The technique of prepared flake removals from flat cores that is called the Levallois technique is also common. A number of Middle Palaeolithic sites were located on the terraces of the rivers flowing into Çekmece lagoons, of which Eskice Sirti and Karababa noteworthy (Özdoğan 1983b: 137). The assemblages of these sites indicate a Mousterian

industry, possibly in Acheulean tradition (Özdoğan 1985a: 522). On the Black Sea coast, there are other Middle Palaeolithic sites such as Ağacli and Gümüşdere. Levallois-Mousterian flake tools and side scrapers were found on these sites. In 1986 excavations of Yarimbürgaz Cave, a few flakes using Levallois technique indicate that the cave was inhabited in the Middle Palaeolithic period (Harmankaya and Tanindi 1996).

During the Upper Palaeolithic, there was an increase in the number of sites. The open-air sites, such as Ağacli, Gümüşdere, Haramidere and Ambarli have provided rich material of Aurignacian-Gravettian industry (Esin 1992: 67; Özdoğan 1983b: 137).

During the Epi-palaeolithic period, a number of sites are located along the coasts of the Black Sea and the Sea of Marmara. The sites are located on fossilised reddish sand dunes covering the elevation slopes near the Black Sea and along the slopes of valleys that run into the Sea of Marmara (Özdoğan 1985a: 522; 1989: 203). The most important Epi-palaeolithic sites are Ağacli and Gümüşdere on the Black Sea coast (Gatsov and Özdoğan 1994). The tools spread over a large area on these sites. However, the sites such as Tepecik on the Dardanelles, Haramidere on the northern coast of the Sea of Marmara and Bozdere in the Meriç area, are small. At all these sites the surface yielded was much less than of the Black Sea dune sites. All the Epi-palaeolithic sites, lithic industry is characterised by bullet cores, micro-blades, end-scrapers made of short flakes and a few geometric, mainly lunettes and trapezoids (Gatsov and Özdoğan 1994; Özdoğan 1997). Flint was the main material for the manufacture of chipped stones. Only a few tools are made on the local obsidian.

The Epi-palaeolithic sites on the Black Sea coast were investigated by Gatsov and Özdoğan (Gatsov and Özdoğan 1994). The material coming from the Black Sea coastal sites suggests that there is a local culture in this region at the end of the Pleistocene and the beginning of Holocene. This local culture is called Ağacli after the most prolific site of this period. Gatsov and Özdoğan argue that the local Upper Palaeolithic techniques or traditions had played a decisive role in the formation of the Epi-palaeolithic culture. So they use the term “Epi-palaeolithic” instead of “Mesolithic”.

It is clear that the Epi-palaeolithic inhabitants settled the area during the time both the Dardanelles and Bosphorus were blocked by land bridges, in other words, during the time of the lake phases of the Black Sea and the Sea of Marmara.

In 1980-85 surveys, only one Neolithic site - Kaynarca, was found in the Gelibolu Peninsula (Özdoğan 1986a: 59). In the Uzunköprü region, coarse ware with impressed or incised decoration was found at the site of Maslidere, and it was also dated to the Early Neolithic by Özdoğan (1989). A number of settlements were found in the Central part of Turkish Thrace, and according to Özdoğan, the sherds collected in these sites suggest that the sequence of Karanovo III to Maritsa in Bulgaria could also applied to the Central part of Turkish Thrace (Özdoğan 1982a; 1985a). During the surface surveys of the Istanbul

University, only 4 small sites have yielded pottery similar to the Early Chalcolithic, Pre-Cucuteni / Maritsa in the Balkans (Özdoğan 1985a; Erdoğan 1997). This pottery was called “Kocatepe” after the most prolific site of this type (see Erdoğan 1997). With the exception of Tilkiburnu, no clear evidence has been found for the Late Chalcolithic period (Özdoğan 1982b; 1998a). The disturbed site of Tilkiburnu in the Central part of Turkish Thrace was investigated in 1981 by Özdoğan. The site had been damaged by the dig of a large trench dug and also by a concrete gun-post. Vessels were collected in 4 pits in the section along the destruction trench (Özdoğan 1982b). Özdoğan argues that the pottery from Tilkiburnu bears some similarities to the Gumelnița culture of the Balkans (Özdoğan 1982b). However, some characteristic features of Gumelnița are absent from Tilkiburnu. Özdoğan dated Tilkiburnu to a transitional period between the Chalcolithic and the Early Bronze Age (Özdoğan 1999a: 10). Özdoğan believed that no Chalcolithic, especially the Late Chalcolithic settlements exist in Turkish Thrace (Özdoğan 1998a). During the Early Bronze Age, there was an increase in the number of sites in Turkish Thrace. Most of the pottery on these sites is the normal repertoire of Ezero-Sveti Kirilovo and Mihaliç types (Özdoğan 1993b: 154; 1998a). However, on the Northern shore of the Sea of Marmara and the Gelibolu Peninsula, surface sherds are similar to those of Beşiktepe Ib and Troy I, with minor local variations (Özdoğan 1993b: 154). No pottery of Troy II-V date was recognised in sites on the Northern shore of the Sea of Marmara. However, Early Bronze Age sites in the Gelibolu Peninsula continue to exist throughout this period (Özdoğan 1993b: 156). Although tell sites appear on the Northern shore of the sea of Marmara and the Gelibolu Peninsula, only flat sites were found in the inner part of Turkish Thrace.

Rescue excavation results: After the rescue excavations, the picture of the surface surveys has changed. Özdoğan accepted that most of his analysis about the pottery was wrong until the rescue excavations (Özdoğan et al. 1991). The first rescue excavation was contacted at Yarimburgaz Cave ca 22 km. west of Istanbul in 1986. The rescue operation at Yarimburgaz Cave revealed a sequence of four cultural assemblages with pottery (Özdoğan et al 1991). Yarimburgaz levels 5 and 4 were dated to the Early Neolithic, the Fikirtepe Culture (Özdoğan 1997; 1999b). Material comparable to Yarimburgaz 3 comes from Ilipinar VB, and can be dated to the Early Vinča and Karanovo III horizons in the Balkans (Thissen 1989-90:102). On the other hand, typical Karanovo III and Early Vinča materials were recovered from unstratified deposits of the cave. The curvilinear decoration on the open bowls, as well as the so-called Notenkopf decoration from Yarimburgaz 3, is proposed to have connections with the Linear Pottery Culture in Central Europe (Özdoğan et al. 1991:84). It is very difficult to find exact parallels of the pottery from Yarimburgaz 2 either in the Balkans or Anatolia. Yarimburgaz 2 has probably a local pottery in the Marmara region (Özdoğan 1999a). Besides the pottery levels, the deepest levels of

Yarimburgaz Cave are dated to the Lower Palaeolithic period. Arsebük and Howell investigated the Palaeolithic occupation of the cave later. The cave consists of two separate chambers. The lower chamber was excavated by G. Arsebük and C. Howell between 1987 and 1990 (Arsebük 1996 ; 1998). It has yielded Middle Pleistocene occupations with a large fauna. The chipped stone industry comprises of pebble tools and a large variety of flake tools. No hand axes were found. Flint, quartz and nodules of various sizes were the raw materials for the manufacture of chipped stone tools. Yarimburgaz Cave Lower Palaeolithic occupation was dated to 450 000-130 000 BP (Arsebük 1996). Thus, the earliest known human occupation of Turkish Thrace is found in the Yarimburgaz cave.

In 1989, another rescue excavation took place at Toptepe. It is located on the Northern shore of the Sea of Marmara. Since the mound had already been largely destroyed before excavation, only a part of the deepest layers was intact (Özdoğan and Özbaşaran-Dede 1990; Özdoğan et al. 1991). The early assemblage of Toptepe was without any certain parallel either in the Balkans or in Anatolia. Dull-black and dark grey burnished, tall-necked carinated jars with a strap handle and the coarse ware with impressed and incised decoration are characteristic features of the Toptepe pottery (Özdoğan et al 1991). Later, the excavation of Aşağı Pinar showed that Toptepe is a local culture in Turkish Thrace contemporary with the Karanovo III-IV horizon in Bulgaria (Özdoğan 1998a). The vessels found at Alpallu in the late 1930s can now be seen to belong to the Toptepe culture.

The third rescue excavation was conducted at Hoca Çeşme in 1990-92. It is located West of the Meriç Delta, and was found by S. Başaran during the Ancient Ainos excavations. Four phases were discovered in Hoca Çeşme. The excavations showed that the basal layers of Hoca Çeşme were earlier than Karanovo I, the earliest known Neolithic culture in Bulgaria. According to Özdoğan (1997; 1998b), the basal layers of Hoca Çeşme is a colony settlement; the pottery, small finds, the lithic technology and domesticates are of Central Anatolian origin.

The Beşiktepe-Kumtepe Ia Culture of the Western Anatolia extended into the Gelibolu Peninsula (e.g. Akbaş Şehitliği: French 1964:37). Beşiktepe-Kumtepe Ia types of sherds were also found within pits of layer 0 at Toptepe (Özdoğan et al. 1991), and at Hoca Çeşme phase I (Özdoğan 1993a).

A joint Turkish-German excavation led by M. Özdoğan and H. Parzinger began at the site of Aşağı Pinar, South of the town of Kırklareli in 1993. The occupation levels of wattle-and-daub structures at Aşağı Pinar were dated mainly to the Karanovo III and III-IV cultural horizons. A large burned house contemporary to Karanovo II was also found. A deep sounding at Aşağı Pinar revealed some Karanovo I and Fikirtepe sherds (Parzinger and Özdoğan 1995; Özdoğan et al. 1997; Özdoğan 1998a; 1999b).

In 1994 an excavation was also initiated at the Bronze Age site of Kanlıgeçit, very close to Aşağı Pinar. The site consists of an acropolis and a lower town. A series of meğara with stone foundations inside a fortification wall was discovered (Özdoğan 1998a; Özdoğan 1999a). The construction technique, hitherto unattested in the region, and the associated pottery points to connections with the Troas and West-central Anatolia. This Early Bronze II-III meğaron phase was founded immediately on top of an Early Bronze level with Balkan sherds belonging to the Ezero period (Parzinger and Özdoğan 1995: 29; Özdoğan et al. 1997; Özdoğan 1998a). According to Özdoğan, at the end of the Bronze Age, some Anatolian-sponsored colonies were implanted on Thracian territory (Özdoğan 1998a; 1999a). The Chalcolithic pottery was also recovered in pits at Kanlıgeçit.

In 1993, a rescue excavation was started by the Tekirdağ Museum at the site of Menekşe Çatağı on the Northern coast of the Sea of Marmara. Early Bronze Age layers were found on top of the late Neolithic (Toptepe) settlement. The two occupations are separated by a hiatus (Özdoğan and Işin 1999; 2000).

In 1995, an archaeological research program was initiated by the author in the Edirne region. The aim of this research was to identify new prehistoric sites, to refine the database of known sites and identify the distributions of types (Erdoğu 1997; 1999a). The surface survey aims expanded to cover the Neolithic to the Early Bronze Age periods only. Certain sections within the study area were chosen for original fieldwork where a gap in previous research was particularly apparent. As a result of this survey, 20 prehistoric sites ranging from Neolithic to the Early Bronze Age were recorded. Most of them were new sites. In 1999-2000, our project comprised detailed, intensive survey over selected parts of Turkish Thrace, and also used systematic field collection techniques on selected sites. The results of the surveys will be presented in this thesis.

I.C.3 Previous Research on Connections Between Southeast Europe and Anatolia.

In the 1930s and 1940s, archaeologists working in Anatolia and Southeast Europe recognised similarities in material. Similarities in material culture between the two continents were explained by the diffusionist model. The concept of diffusion is the introduction of innovations from an advanced centre or culture to a less advanced one (Chapman and Dolukhanov 1993: 4). Many expressions are used to define the theoretically possible models of cultural diffusion, such as migration, invasion, colonisation, absorption, adaptation etc. The discourse of diffusion is exemplified in its most important defender, V. G. Childe. He saw Europe as receiving basic technological innovations from the civilisations of the Near East in a process of diffusion, at the same time rejecting the spread of state formations and despotism (Childe 1957; Trigger 1989).

Anatolia has been placed in a difficult position in the traditions of research influenced by Childean Orientalism. Anatolia is not within the centre but neither is it in the European centre of regrowth. In the early 1930s, Alişar Höyük was the only excavated mound in the Central Anatolia. The basal layers of Alişar ca. 20 m of archaeological deposits, were however, dated to a single period: the Late Chalcolithic / EBA I. This chronological framework of Alişar becomes the main keystone for dating all Central Anatolian cultures. From the mid 1930s to the 1950s, more sites were excavated, such as Alaca Höyük, Büyük Güllücek, Horoztepe, Pazarlı, etc. The chronological framework of Alişar was also applied to these new sites. The date of 3000 BC had been set as the early cultures in Anatolia, as well as Europe. In the 1960s, Neolithic sites, such as Hacilar, Çatal Höyük, Süberde and Aşikli Höyük were discovered on the Anatolian plateau. However, these sites were seen as trading posts for obsidian and salt trade, not as indicators of a developing Neolithic culture on the Anatolian plateau (Özdoğan 1995: 28). Later, with the large-scale application of C14 dates in Europe, the dates of South-Eastern early Neolithic cultures were pushed back 2-3000 years. However, the chronology of Central Anatolian cultures has persisted up to the present.

After the discovery of Vinča in Serbia early in this century, Vinča-Anatolia connections were discussed by scholars working in Anatolia and Europe. Parallels between Vinča and Troy were outlined by Vasić on the basis of Vinča face-lids (Vasić 1907). This view was adopted by later diffusionists such as Garašanin and Miložčić. V. Fewkes also saw similarities between the basal layers of Alişar Höyük in Central Anatolia and the Danubian region. According to Fewkes, similarities in pottery exist not only in forms and surface treatment but also in many significant aspects of technology (Fewkes 1936: 17, 74). Similarities between Central Anatolian sites and Southeast Europe were outlined by Schachermeyer as a part of the diffusionist model (Schachermeyer 1962; 1976). The same issue was emphasised by Koşay (1963) mostly on the basis of Alaca Höyük and Büyük Güllücek materials in Central Anatolia. However, Koşay was not concerned to discuss the movement of people.

Most of the early arguments about the relationships between Southeast Europe and Anatolia were mainly interested in locating the origin of Southeast European cultures, as a part of diffusionist model. (e.g. Miložčić 1949; Garašanin 1961). Miložčić attempted to build a scheme known as the "Comparative-Stratigraphy" approach, supporting diffusion to the Balkans from the Near East (Miložčić 1949).

J. Mellaart was the first archaeologist who tried to follow the logic of C14 dates in this debate (Mellaart 1960). He refused the diffusionist view on the basis of C14 dates. Garašanin attacked Mellaart's view and proposed the theory of Balkan-Anatolian complex on the basis of the formation of the Balkan "dark burnished ware" cultures originating as a result of diffusion from South and East (Garašanin 1956; 1961). The Balkan-Anatolian

Complex was accepted completely or partly by most of the post-1950s diffusionists such as Jovanović, Benac and Dimitrijević (Chapman 1981: 2). Another similar diffusionist view talks about an “eastern shock” transmitted from the Karanovo III group in Bulgaria and Greek Macedonia, which reached the Central Balkans (Chapman 1981: 2).

In 1961, three clay tablets (or plaques) together with burned clay idols and objects and 2 “Cycladic type” of alabaster idols were discovered in a pit at the site of Tărtăria in Romania by Vlassa (1963). Some diffusionists claimed that the signs on the tablets as evidence for contact between the Balkans and Mesopotamia in the Jemdet Nasr period (Falkenstein 1965; Popović 1965; Milojević 1965; Hood 1967; Makkay 1969). Further investigations have made headway in understanding the chronological position and the nature of these tablets. The tablets found were associated with the Vinča Culture level and the interpretations lean on the identification of the signs on the tablets as local innovations and elaborations of markings found on pottery of the Vinča culture (Renfrew 1979:67,176-178; Tringham 1971: 114). Clay analysis of the tablets show that the tablets are locally made (personal communication, J. Chapman). However, the meaning of these symbols in the tablets is still disputed.

Since the 1960s archaeology has been gradually but inexorably transformed by a new emphasis on theory and methodology - the so-called “new archaeology”. The arguments now have focused on the relationships between settlement systems, economy and social structure. On the basis of calibrated radiocarbon dates, C. Renfrew argues that metallurgy developed in Europe independently earlier than the Near East and megalithic structures in Europe prior to any monumental constructions in the Near East and these monuments are interpreted as being of indigenous rather than Eastern origin (Renfrew 1973). Because of early C14 dates, Renfrew created a chronological fault-line between North, East, West Europe and Near East, Anatolia, Aegean (Renfrew 1973). However, one should recall that the excavations and C14 dates from Anatolian sites were not numerous in the 1970s.

Among the directions of processual archaeologists, theoretical presuppositions can be tested using scientific techniques. Renfrew suggested that stratigraphies can be established from excavated sites in small geographical regions, and then the radiocarbon dates can be used to test the relationships between the different regions (Renfrew 1973). On the basis of this idea, sites such as Sitagroi on the radiocarbon fault-line were excavated. Processual archaeologists have acknowledged that cultures and societies frequently arose indigenously, and investigations into interregional contacts are now commonplace.

New research also focused on the geographical origin of cultures, their similarities and differences and cultural changes (e.g. Clarke 1968; Renfrew 1979; 1984; Binford 1972). Discussions about the origins of the European cultures no longer centre on whether such cultures were derived from Anatolia or Near East. D. Clarke argued that the main

factor affecting artefact similarity was the efficiency of the person-to-person contact and the extent and continuity of contact (Clarke 1968). He also tried to explain different patterns of cultural changes such as cultural assimilation, culture group repatterning, cultural and subcultural intrusion/substitution and stimulus diffusion (Chapman and Hamerow 1997: 3).

In the early 1970s, a demic version of diffusion was developed by Ammerman and Cavalli-Sforza (1973). The earliest appearance of domestic resources was interpreted to provide a rate of diffusion, which was modelled in terms of demographic expansion across Europe (Ammerman and Cavalli-Sforza 1984). The spread of farming involves the initial development of agriculture in Anatolia followed by its rapid diffusion resulting from differential population growth between farmers and hunter-gatherers. Rapidly growing farming populations expanded the Neolithic frontier, disrupting and over-exploiting wild resources and overwhelming Mesolithic hunter-gatherers. Thus, the hunter-gatherers of the region were either displaced or became agriculturalist themselves.

An alternative model was first represented in D. Clarke's agriculture replacement model. Clarke suggest that prior to the transition to agriculture in Europe, late Palaeolithic and Mesolithic hunter-gatherers were transhumant and primarily focused on reliable plant resources in the region. With changing landscape and climates, large migratory herbivores become less reliable as a food resource, leading toward the eventual collapse of the transhumant system in favour of marine resource exploitation during summer. Plant foods become very important, with increasing sedentism there was greater ability, and perhaps greater need, to control and manipulate such resources. During the time of intensive plant use, and plant and animal manipulation, Neolithic domesticates become available. Because of their advantages in productivity and storage, Neolithic domesticates rapidly replaced wild resources, and eventually reduced the role of marine resources as well (Clarke 1976).

On the basis of the relationship between resources, interaction and cultural similarity, A. Sherratt outlined what he called the "secondary products revolution" in which all the crucial developments before 4000 BC seem to have taken place in Mesopotamia and Levant and their appearance outside of this area, e.g. Europe, seems to have taken place very rapidly after 3000 BC, as a result of external intervention (Sherratt 1981). Sherratt's idea of a "secondary products revolution" was close to a core-periphery model in which the development of asymmetrical relations among interacting societies and upon the phenomenon of unequal exchange was structurally weighted to the advantage of "core" societies over their "peripheries". The extension of the core and the transformation of local peripheral institutions occurred through interaction. According to Sherratt, the Near East was the "core" and Europe was a "periphery" in the 4th millennium BC (Sherratt 1993).

Processual archaeologists have not given much effort to explain migrationism. According to J. Chapman, there are a number of factors for the Processual archaeological "Retreat from Migrationism", such as 'the decline of colonialism since World War 2 and the retreat of westerners from large parts of the globe, the British tendency to insularity, reinforced by the development of the Welfare State, the ambiguous results provided by migrationist hypotheses and the alternative explanations concurrently developed and the influence of the temperaments of individual archaeologies for the acceptance of one form of explanation over another' (Chapman 1997: 13). Renfrew has observed that what was rejected in the "Retreat from Migrationism" was the evidence for migrations, not migrations *per se* (Renfrew 1987).

The argument about connections between Anatolia and Southeast Europe may be established in different periods (Neolithic, Chalcolithic and Early Bronze Age) and different regions (Thessaly, Macedonia, Bulgaria etc.). In the early Neolithic period, similarities in pottery, female figurines and some small finds like pseudo-stamp seals, between the sites from Thessaly and Macedonia and Anatolia, especially sites of Çatal Höyük and Hacilar, have been recognized (e.g. Milošević 1960: 6,10 ; Holmberg 1964a: 37 ; Rodden 1964: 121-122 ; Theocharis 1973 ; Mellaart 1975: 246). Similarities have been seen in the technology and shapes of the Monochrome pottery from some Thessalian sites, such as Argissa to the dark burnished ware of Çatal Höyük VIII-II and early Hacilar monochrome ware. Proto-Sesklo type of Monochrome and painted pottery from Greek sites such as Sesklo, Nea Nikomedeia and Agios Petros show good similarities to Hacilar IX-VI (Milošević 1960: 6; Holmberg 1964a: 37; Theocharis 1973; Efstratiou 1985: 78 etc.). The seated mother goddess figurines, especially the faces of figurines from Thessaly, Macedonia and Western Thrace, at sites such as Sesklo, Nea Nikomedeia, Makri and Agios Petros, show remarkable similarities with examples from Hacilar (Milošević 1960; Rodden 1964; Efstratiou 1985: 132).

Many excavations and surface surveys have been carried out in Central, Northern and North-Western Anatolia over the past few years. As a result of these investigations, arguments about the similarities in material culture between South - Eastern Europe and Anatolia have increased. Alişar Höyük was re-excavated in 1993-94 by Gorney (Gorney et al. 1995). The site of Gelveri was found and a small sounding was conducted by U. Esin in 1991 (Esin 1993). The materials from Dündartepe and İkiztepe in the Northern Anatolia were re-investigated by Thissen in 1993, finding strong parallels with Southeast European cultures (Thissen 1993). The excavations at Ilipinar (Roodenberg 1995), Orman Fidanlığı (Efe 1996) Yarımburgaz, Toptepe and Hoca Çeşme (Özdoğan et. al 1991; Özdoğan 1997) and the surface surveys of Özdoğan and Efe in North - Western Anatolia and a large-scale survey of the Japanese team in Central Anatolia (Omura 1992; 1993; Mikami 1992) have made much headway in understanding the contacts between Anatolia and Southeast

Europe. The corpus of Anatolian information concerning contacts between Central Anatolia and Southeast Europe, composed mainly of pottery evidence, was compiled by M. Özdoğan (1993a; 1991; 1996a). The materials from the Black Sea coast were analysed by Thissen (1993). According to Özdoğan, Thissen and Steadman, similarities in the material culture between Anatolia and South-Eastern Europe cannot be explained by diffusion, migration or a simple exchange mechanism (Özdoğan 1993a: 177; Thissen 1993: 208; Steadman 1995). The materials between two regions were supported a homogenous cultural zone between Anatolia and the Balkans. According to Özdoğan, there is a large geographical zone - Northern, Central Anatolia and the Balkans- in which cultural processes, including technological innovations, move along at a similar rate, but with internal diversity (Özdoğan 1993a: 177).

On the other hand, even recently the origins of the South-Eastern European Neolithic were still explained as the result of a migration or colonisation from Anatolia (Özdoğan 1998b; Nikolov 1993; van Andel and Runnels 1995; Demoule and Perlès 1993). According to Özdoğan's scenario of endemic movement, the colonisation of Northern Aegean was linked to the foundation of a farming colony at Hoca Çeşme (Özdoğan 1997). Özdoğan's scenario of endemic movement is highly compatible with van Andels's and Runnel's demic diffusion, in which the idea of an agricultural frontier has usually been associated with models of colonisation analogous to farming colonisation in the colonial period of recent centuries (van Andel and Runnels 1995). Like van Andel and Runnels Demoule and Perlès, believe that the origin of the Greek Neolithic colonization or migration was from Anatolia (Demoule and Perlès 1993: 364-365). Nikolov argues that the origin of the Bulgarian Neolithic is a result of migration from Anatolia, along the Maritsa Valley (Nikolov 1993). As Zvelebil outlined, 'the co-eval introduction of agro-pastoral economy and new material culture with links to Anatolia, the absence of hunting-gathering by Neolithic communities, residential permanence and long-term continuity of the Neolithic settlements in Thessaly and Argolid, the spatial discontinuity between the known Mesolithic and the Neolithic settlements' and finding Central Anatolian type of sites like Hoca Çeşme in Turkish Thrace (Özdoğan 1997) are major arguments in favour of the colonisation hypothesis (Zvelebil 1995: 118-119). However, indigenists such as Dennell (1984) and Barker (1985) assume that the local adaptation of farming by indigenous hunter-gatherer communities throughout Europe. Hunter-gatherer / farmer exchange networks rather than population incursions from the Near East or Anatolia may also have been responsible for the spread of farming into many part of Europe. Zvelebil and Rowley-Conwy suggest an "availability model", in which domestic resources are available to local hunter-gatherers far earlier than the date at which farming accepted, let alone the period when agriculture becomes a subsistence mainstay (Zvelebil and Rowley-Conwy 1984). Chapman argues that the farmers who transmit the ideas and the resources germane to

farming onwards across Europe were themselves hunter-gatherers or descended recently from hunter-gatherers (Chapman 1994a: 145). He also outlined the existence of Late Mesolithic breeding networks, whose presence is taken to be attested minimally by a single long-term Mesolithic settlement in a given region (Chapman 1994a: 145). According to Zvelebil, local adaptation does not preclude inter-regional migration between hunter-gatherer and farmer communities at several possible scales of population (Zvelebil 1986).

I.D. RESEARCH PROBLEMS

I.D.1 Problems in Material Culture

Turkish Thrace is situated between the Balkans and Anatolia. The most important question is what the role of Turkish Thrace was for the spread of farming to Southeast Europe. The Fikirtepe culture sites and Hoca Çeşme are the earliest Neolithic sites in the Marmara region. According to C14 dates, the early Hoca Çeşme and early Fikirtepe were earlier than Karanovo I culture in Bulgaria, but contemporary with Proto-Sesklo culture in Greece (Erdoğu 2000). Özdoğan believes that Hoca Çeşme is an Anatolian colony in Turkish Thrace without any forerunners in the region (Özdoğan 1997; 1998b: 448). According to Özdoğan's scenario of endemic movement, the full Neolithic was first established in North-Western Anatolia, later followed by Hoca Çeşme in the North Aegean (Özdoğan 1997:19-27). However, the C14 dates of Hoca Çeşme and early Fikirtepe are contemporary. Özdoğan also argues that the "monochrome phase" sites in Bulgaria, such as Koprivets seem to be genetically related to the early Fikirtepe culture (Özdoğan 1997: 22). However, the existence of the "Monochrome phase" sites in Bulgaria is still an open issue. Similar early Hoca Çeşme pottery was found on two sites in the Dardanelles - Kaynarca and Hamaylitarla (Buruneren). However, Özdoğan dated Kaynarca and Hamaylitarla to the Late Classical phase of the Fikirtepe Culture (Özdoğan 1997: 21; 1999b: 214).

In Turkish Thrace a number of local variations at the pottery types in the Late Neolithic has been found. At the beginning of this period regional differentiation can be distinguished in the pottery styles of Toptepe, Maslidere and Karanovo III-IV. Moreover, at the end of this period the sherds recovered at the sites of the Upper Ergene Basin are similar to Kalojanovec with major local variants - Çardakalti. The relationships between the different regional cultures in the Late Neolithic have not yet been properly studied.

Data concerning the Late Chalcolithic period are very scarce and sites known from this period are not numerous. The apparent dramatic decrease in population of Turkish Thrace in the Late Chalcolithic period is one of the major research problems in the region, suggesting that we are facing a pattern of regional significance. The limited excavations at

the sites of Tilkiburnu and Kanlıgeçit in the province of Kırklareli provide the only available material from this period (Özdoğan 1982b; Parzinger and Özdoğan 1995: 29). At both sites Karanovo VI- Gumelnița type of pottery were found in pits. Özdoğan dated Tilkiburnu to a transitional period between the Chalcolithic and the Early Bronze Age (Özdoğan 1999a: 10). Until recently Özdoğan believes that during the Late Chalcolithic period Turkish Thrace was empty (Özdoğan 1998a).

I.D.2. Problems in Settlement Studies

Only large-scale extensive surface survey was conducted in Turkish Thrace between 1980 and 1985 by the University of Istanbul, under the director of M. Özdoğan. The methodology for the location of new sites was targeted fieldwalking in areas of supposed highest settlement density, with unsystematic collection of artefacts. According to Özdoğan, systematic collection was not possible in Turkish Thrace (Özdoğan 1983a: 304). The excavations at the sites of Aşağı Pinar and Kanlıgeçit were the only large-scale, controlled excavations in Turkish Thrace; other excavations such as Töptepe, Yarımburgaz Cave, Hoca Çeşme, Tilkiburnu, Çardakaltı and Alpullu were small-scale rescue excavations.

During the last two decades, archaeology has been transformed by new emphases on theory and methodology. Intensive survey is now preferable and largely in use (Keller and Rupp 1983; Macready and Thomson 1985; Francovich et al. 2000). A number of survey projects, such as Keos (Cherry et al. 1991), Boeotia (Bintliff and Snodgrass 1985), Dalmatia (Chapman et al. 1996) and others (Mattingly 2000) showed that more intensive surveys concentrating on smaller study areas have produced site densities much higher than large-scale extensive surveys. "Sampling designs" obtained from the intensive surveys are initially aimed at the assessment of the quality of existing data in different parts of the region and the provision of a far more reliable means of interpretation of ancient settlement patterns. Several factors can affect intensity, such as the spacing between field walkers, the number of man-hours spent in the survey, vegetation type, soil type and weathering (Schiffer et. al 1978: 13).

Our prehistoric research in the Edirne region was started in 1995, and it is divided into two stages: extensive survey and intensive survey. Extensive survey was conducted in small areas which geographically well-defined as the basins of the Tunca, Süloğlu, the area along the southern fringes of the Istranca Mountains and the Meriç area. The aim of the extensive survey was to identify new prehistoric sites, to refine the database of known sites and identify the distributions of site types. Extensive survey was carried out by systematic walking only the areas of supposed highest settlement density and some of the ploughed fields (Erdoğan 1999b). Even our extensive survey that was conducted in small areas has

produced site densities much greater than the earlier large-scale extensive surveys of Istanbul University. Until now, no intensive surveys have been conducted either in Turkish Thrace or Western Anatolia. Thus our work is unique for whole region.

I.D.3. Problems in the Relationships between Anatolia and the Balkans

As a result of recent discoveries in Anatolia, argument about the relationships between Anatolia and Southeast Europe has increased (e.g. Özdoğan 1993a; Thissen 1993; Steadman 1995). Similarities can be traced especially in pottery, figurines and metal objects; for instance, figurines and metal objects from İkiztepe and Dündartepe in Northern Turkey show similarities with the Gumelnița culture (Thissen 1993), and pottery from Gelveri in Central Anatolia show similarities with the Pre-Cucuteni, Maritsa and Boian cultures in the Balkans (Özdoğan 1991; Esin 1993). As I mentioned earlier, Özdoğan, Thissen and Steadman believe that the similarities in material culture between two regions cannot be explained by diffusion, migration or exchange mechanism. According to them, similarities between Anatolia and the Balkans indicates that the Balkans and Northern and Central Anatolia constituted one single cultural zone, and cultural processes move along move along at a similar rate, but with internal diversity (Özdoğan 1993a: 117; Thissen 1993:208; Steadman 1995). However, none of them explain how cultural processes developed. On the other hand, none of the Anatolian pottery is exactly identical to the Balkans - they bears general similarities. Archaeological evidence from different periods in Anatolia indicates that no single theory may explain the relationships between the Balkans and Anatolia.

Problems in material culture, settlement studies in Turkish Thrace together with problems in the relationships between the Balkans and Anatolia have been outlined above. In Chapter II, I shall discuss our extensive and intensive surface survey results in the Edirne region, in the Northwestern part of Turkish Thrace. In Chapter III, I shall investigate settlement pattern in the Edirne region as well as the whole of Turkish Thrace. In Chapter IV, I shall investigate artefacts, such as pottery, chipped stone, figurine and stone axes, from our extensive survey. In Chapter V, on the basis of our intensive work in Turkish Thrace, I shall discuss the Neolithic and Chalcolithic cultures of Turkish Thrace and their internal relations, and in Chapter VI, I shall explain cultural changes as well as the relationships of Turkish Thrace in both the Balkans and Anatolia.

CHAPTER II. SURFACE SURVEY DATA

II.A. INTRODUCTION

Much survey today is aimed at studying the spatial distribution of human activities, variations between regions, changes in population through time, and relationships between people, land and resources (Renfrew and Bahn 2000: 71). Modern survey today is done in a systematic way. Systematic surveys can be more extensive, yielding results on a very large scale, and designed to discover the overall densities of surveyed sites and monuments. Surveys can be made more intensive when they cover a small region or a single site or site cluster. The four basic questions to which intensive field survey can provide at least partial answers have been defined by Cherry, Gamble and Shennan (1978) as: the number of sites in the area, the number of sites by period and function, the relationships between archaeological sites and environmental variables, and the inter-relationships between archaeological sites. Obviously it would be impossible to attempt to survey a whole region at an adequate level of intensity by field walking. A sampling design will therefore be required parts of the region (Schiffer et al 1978; Plog et al 1978). Intensive surveys with sampling designs were increasingly practised in the 1970s and especially 1980s (Keller and Rupp 1983; Haselgrove et al. 1985; Macready and Thompson 1985). In the 1990s, intensive survey with sampling designs continues to be practised. However, in the 1990s micro-regional and site surveys with using geophysics and detail investigating environment have increased (cf. the Podgoritsa Geophysical Survey: Bailey et al. 1998). Cherry argued that best results have invariably been obtained from projects that were systematically intensive in the method of field walking, and which investigated settlement problems at some kind of regional rather than very limited local scale (Cherry 1983). He also calculated that intensive surveys using teams of 4-6 people walking parallel lines 10-15 metres apart have found up to 60 or 70 times the number of sites as those found extensive surveys. Plog et al (1978: 390) also agree that survey intensity related to spacing between field walkers. Only intensive surveys have been able to map very small sites.

Sampling techniques are usually classified as either judgmental or probabilistic. Judgmental sampling involves the conscious selection of areas for examination on common sense principles, such as a particular kind of archaeological site or areas most threatened. The difficulty with the results of judgmental sampling on its own is to demonstrate that clusters and gaps in the data are equally real and not just a product of the methodology. For this reason, probabilistic sampling is often used. It involves collecting data the reliability of which can be measured statistically. Variations of four probabilistic sampling techniques are commonly applied (Schiffer et al. 1978; Mueller 1975). The simplest technique is a simple random sample, where the areas to be sampled are chosen

using a table of random numbers. Stratified random sampling is an improvement on this, the area being 'stratified' first into its major natural sub-regions, such as soil type of topographic features and equal proportions of search units then being calculated for each sub-region to ensure representative coverage. In systematic sampling, search units are spaced out equally, perhaps as transects or as coverage. Finally, a more satisfactory method is to use a stratified systematic sampling, which combines the main elements from all three techniques. The area is divided into a grid, each part of the grid is sampled systematically, but within each part the unit of study is selected randomly (cf. the Griki Hacıyan survey: Redman and Watson 1970). In large - scale surveys transects are sometimes preferable to grids (cf. the Chaco survey: Judge et al. 1975). The application of probabilistic sampling has met criticisms because of the "Teotihuacan factor". During the valley of Mexico probabilistic survey, a large and important site like Teotihuacan was missed. As Barker argued, there is no right sampling strategy for survey, just as there is no single strategy appropriate to all excavations (Barker 1991: 4).

A number of experiments have been carried out with encouraging results. At the tell site of Griki Hacıyan in Eastern Turkey, stratified systematic sampling was applied. A grid of 5 m squares was used, but oriented along the site's main N-S/E-W axes, and the samples were selected with reference to these axes (Redman and Watson 1970). The transect system was applied to the survey of the island of Melos. One - km wide strips running North-South across the island was examined by group of 10 to 12 people, walking in parallel lines spaced 15 m to 25 m (Renfrew and Wagstaff 1982: 16-18). The archaeological field survey in Dalmatia is also noteworthy. The survey selected three transects, 1 km wide, running across the grain of the geological structure of the peninsula with the purpose of sampling different types of soil from the edge of the sea to the highest ground (Chapman et al. 1996: 47). A number of survey projects like Keos (Cherry et al. 1991), Boeotia (Bintliff and Snodgrass 1985) and Dalmatia (Chapman et al. 1996) show that more intensive surveys concentrating on smaller study areas have produced site densities much greater than large-scale extensive surveys. Survey intensity is the amount of effort devoted to inspecting the surveyed area and the number of person-days per unit area inspected (Plog et al. 1978 ; Schiffer et al 1978: 13) The spacing between field walkers is important, commonly 10-20 metres apart is preferred. Small units surveyed at close intervals yield successful results in the search for small and isolated sites. The most easily quantifiable measure of intensity is the number of people - hours spent in the survey area. If a team spends more time in an area or unit, the survey intensity will increase. Field workers vary in survey skills and a team have different group dynamics that affect the intensity of survey. The latter index of intensity obscures variability resulting from differential accessibility and weather (Schiffer et al. 1978). The weather; heavy rain, snow on the ground or very hot weather act to reduce discovery probabilities. Difficult

environments, such as dense forest, bushes etc. and land-holding patterns, such as military area, factory area etc. affect survey accessibility (Schiffer et al. 1978).

II.B SITE AND NON-SITE

In the 19th century archaeological attention was focused on 'monuments'. Portable objects played a supplementary role for understanding 'monuments'. Systematic efforts to catalogue places of archaeological interest began in the 1920s (Dunnell 1992: 22) and the term 'site' was ubiquitous in the discipline. In the early 20th century, the term 'site' was used not only for a place, town or settlement but also for monuments and artefacts. The definition of a 'site' does not appear routinely until the mid-20th century (Dunnell 1992: 23).

In the 1950s, Willey and Phillips defined 'a site' as the smallest unit of space dealt with by the archaeologist and the most difficult to define. Its physical limits, which may vary from a few square yards to as many square miles, are often impossible to fix' (Willey and Phillips 1958). According to Willey and Phillips, sites are group of objects in spatial proximity. Single objects were not sites. Their insistence on the site's basic or minimal nature and vertical and horizontal boundaries identify its function as a unit of association.

In the 1960s, Hole and Heizer defined

'a 'site' as any place, large or small, where there are to be found traces of ancient occupation or activity....some sites are as large as a city, others as small as the spot where an arrowhead lies' (Hole and Heizer 1965: 33).

Most archaeologists more or less accepted this view; For Bahn,

'a 'site' as any place where there is evidence for past human behaviour. A site can be as small as an isolated find, which is either a single artefact or a small number of artefacts from which few inferences can be drawn, or as large as an ancient city' (Bahn 1992).

On the other hand, Binford gave a different definition of a 'site';

'the site is a spatial structure of cultural features or items, or both. The formal characteristics of a site are defined by its formal content and the spatial and associational structure of the population's cultural items and features present' (Binford 1964: 431).

According to Binford, a 'site' is no longer a place distinguished by artefacts; rather, a site is comprised by the artefacts themselves and their spatial relations. Sites are not justifiably regarded as homogeneous, 'areas within sites vary functionally'. A site was an entity that could have contents and structure.

Plog et al. regard a site as the basic unit of interpretation; 'a site is a discrete and potentially interpretable locus of cultural materials' (Plog et al. 1978: 389), artefacts or

facilities with an artefact density of at least 5 artefacts per square meter (Plog and Hill 1971:8). According to Plog et al., what is or is not a site depends on what one's methods of inference require (Plog et al. 1978).

Wilke and Thompson suggest that the threshold density for cluster boundaries be determined empirically by selecting the particular density level that maximizes the number of clusters. Such a threshold can be unambiguously determined because, at threshold values higher than the optimal number, the number of clusters diminishes, as an increasingly larger fraction of the artefacts no longer belong to sites. Conversely, at threshold values smaller than the optimal value, the number of sites diminishes because separate clusters are increasingly joined to form super clusters (Wilke and Thompson 1977: 19-20).

According to Doelle, a site must exhibit definable limits; it must contain evidence of more than a single occurrence of human activity; if no other criteria exist for defining a site, then an artefact density must be greater than 5 artefacts per square meter (Doelle 1977: 202).

The analytical task of archaeology is to explain the density and character of the more or less focal but continuous distribution of artefacts. The high-density cores have traditionally been the focus of surveys. However, isolated artefacts and low density scatters have been recognised increasingly in recent years, and the term 'non-site' or 'off-site' started to be used (Dunnell and Dancey 1983; Thomas 1975; Foley 1981b; Bintliff and Snodgrass 1988). 'Non-site' or 'off-site' artefacts may be very important for archaeologist, which they may give evidence of peoples lifeway.

II.C. NON-SITE OR OFF-SITE ARCHAEOLOGY

At the beginning, finding "sites" -the distinct concentrations of artefacts- was the main focus of the surface surveys. Off-site information was ignored because it did not fit neatly within existing archaeological conceptions of human settlements systems. Small scatters of artefacts on the surface were taken as unimportant "background noise". Since the mid 1970s, ethnoarchaeological studies focussing on the mobile or semi-sedentary subsistence-settlement systems of hunter-gatherer groups showed that much of the behaviour of hunter-gatherers creates discontinuous spreads of surface material over many hundreds of metres rather than discrete artefact clusters (e.g. Yellen 1977; Foley 1981a; 1981b). Archaeologists working in Britain, the Near East and the Mediterranean region discovered that off-site pottery scatters formed an almost unbroken carpet throughout the landscape and they considered that off-site archaeology is not only for mobile societies but even for more sedentary social groups (cf. Boeotian survey: Bintliff and Snodgrass 1985 and The Maddle Farm Project: Gaffney and Tingle 1985 and others Mattingly 2000).

Cherry outlined that, since no society has ever lived, eaten, worked and died within the limits of a single site, we cannot study society at this level alone (Cherry 1984: 119). Because of many different reasons, artefacts are discarded away from the settlements. Off-site survey methods have been variously motivated by the relatively continuous archaeological materials found in the landscape (Dunnell and Dancey 1983; Thomas 1975; Bintliff and Snodgrass 1988; Bintliff 1992; Bintliff 2000; Foley 1981b). Off-site information is very significant for a comprehensive picture of landuse and clearly must be considered as one essential part of total survey design. Archaeological surveys concentrating on smaller study areas, such as Boeotia (Bintliff and Snodgrass 1985), Keos in Greece (Cherry et al. 1991), Kurban Höyük in Turkey (Wilkinson 1989) and Hvar in Croatia (Gaffney et al. 1991) have provided imported evidence relating to past land use and settlement systems. At Hvar, less than a km was surveyed in the 1987 field season and in Boeotia, 45 km was surveyed over 5 years. In the Boeotia survey, off-site sherds, dating mainly to the Roman and Medieval periods, formed an unbroken carpet throughout the landscape (Bintliff and Snodgrass 1988; Bintliff 1992). The off-site values lie between 0.4 and 45+ sherds per 100 square meters and the upper end of the range has been interpreted as “haloes” around the settlements.

In the Keos survey, off-site artefacts mainly dated to the Roman period were found. One important difference between the Boeotian and the Keos data is that, on Keos, artefact densities do not decline monotonically, as a function of distance from sites, until residual background levels are attained (Cherry et al. 1991). In the Keos survey, the overall mean of off-site density is 0.5 sherds in 100 square meters. However, most of the off-site artefacts were dated to Roman period.

At the Kurban Höyük area in Turkey only a few km was investigated. Intensive survey in the Kurban Höyük area showed that, around the main settlements on Euphrates terrace, off-site artefacts were found within a radius of ca 1 km. Most of the off-site sherds were Late Roman-Early Byzantine type. The off-site density ranged between 10 and 40+ sherds per 100 square meters (Wilkinson 1989).

II.C.1 Natural Artefact Transport and Post Depositional Disturbance

A number of factors related to natural transport and post-depositional disturbance should be taken into consideration during the surveys. Individual artefacts are removed from their context by rain and wind process, erosion, burrowing animals, root action, and human activity - kicking, scuffing, trampling and especially ploughing. Thus this makes it difficult to interpret surface artefacts. Observation of surface artefacts on ploughing sites showed that sherds planted in the immediate subsoil undergo significant lateral displacement within several years (Roper 1976; Ammerman 1985). Roper's plough soil

experiments show that, after two or three decades of ploughing, artefacts may be displaced by anything between 20 cm and 10 m (Roper 1976). A. Ammerman's experiments in southern Italy suggest that, by the end of six or more ploughing episodes, a tile moved between 1.18 m and 1.74 m. Many tiles moved no further than 2 m from their starting position (Ammerman 1985: 38). A number of factors such as type of agriculture, nature of soil and landscape can affect artefact movement (Bintliff and Snodgrass 1988; Clark and Schofield 1991). In an arid environment with light soils, artefact movement may be less than in a temperate climate, where heavier soils predominate (Clark and Schofield 1991: 94). Smaller material on slope surface tended to move far from than larger material on flat surface. Poor condition of sherds and low numbers may also make it difficult to distinguish surface artefacts chronologically and spatially. Erosion is not only one important factor of artefact exposure, but also a factor of artefact movement. Because of erosion, a significant part of the soil has been removed from its original location. The recent studies of erosion suggest how a combination of fluvial events can affect the distribution and visibility of ploughsoil assemblages (Taylor 2000). According to Taylor,

'erosion of fine soil particles by sweethwash and small rills are frequent and regular events on terraced soils and seem unlikely to result in significant downslope movement of artefacts. Instead the regular removal of the silt and fine sand fractions results in an overall loss of soil depth on hillcrests and increase in depth at the bottom of slopes. These changes in soil volume will effect sherd concentrations in the matrix accordingly and thus numbers visible on the surface' (Taylor 2000: 24).

Evans and O'Conner argues that 'successive periods of sedimentation and human occupation create zones of difference between life and the archaeological record, with greater surface diversity of sites and artefacts on eroding slopes where they are conflated in thin soils, than on valley floors where they are spaced out by sedimentation' (1999: 89). Stone is the heaviest material and it is not transported as easily as pottery. Allen observed that after four years, over 60 flints, which represent 80% of total assemblages, had moved 50 m down-slope (Allen 1991). This indicates that down-slope movement is possible over large distances.

The effect of erosion will depend on the nature of the original burial. If gradual, then the subsequent erosion surface will represent a palimpsest of a long-term span, and the density would be increased. If sudden, then the original density would be maintained. Although erosion will usually result in the formation of palimpsests, it should be remembered that all archaeological situations are palimpsest, and it is only the scale that varies. The burial-exposure cycle can occur more than once (Foley 1981b).

II.C.2 Interpreting Off-site Artefacts.

Single finds or minor concentration of finds on a landscape, around the settlements may be explained by several process such as, manuring, seasonal use field huts or facilities, field cooking and eating, manufacturing, rubbish management, artefact preparation and ceremonial locales etc.

Wilkinson who works on the Near Eastern sites argued that artefact discard around the settlements is associated with agricultural activities, mainly manuring (Wilkinson 1982: 324). According to him, such enterprises incorporated a miscellany of artefacts into the manure and all but the largest of these artefacts would eventually be spread on the fields as part of manure. This artefact discard is a continuous process through time. According to Foard, the most plausible explanation of artefact discard around the settlements is that most derive from domestic rubbish scattered on the fields as or with manure (Foard 1978: 363). Gaffney and Tingle also agrees that artefact discard in surrounding individual settlements should therefore, in some circumstances, define a minimum economic area associated with that site (Gaffney and Tingle 1989: 216). The presence of large amounts of pottery in the fields around a settlement is associated with manuring activities (Gaffney et al. 1985 ; Gaffney and Tingle 1989: 224). The manure probably originated from the settlement where it was contaminated or mixed with household refuses before being spread on the fields. Neústupný argued that in prehistoric times, manuring would hardly bring any objects to the fields (1998: 56). Prehistoric people, at least in some areas, improved the quality of their fields by transporting sods from their residential area. Such sods could contain sherds and other finds. According to Bintliff and Snodgrass (1988), there are a number of explanations of off-site artefacts, such as household rubbish, incorporated with animal and human excrement and other household refuse, spread deliberately as fertilizer on cultivated fields. Minor activity foci were less intensively used then the normal permanent occupation site and 'the mythical donkey off whose back pots are supposed to have fallen'. Bintliff also argues that the number and degree of material and character of the material can effect interpreting off-site artefacts (Bintliff 2000). According to Hayes, there are four explanations of off-site artefacts - rubbish disposal, manuring, burials and miscellaneous breakages (Hayes 1991).

Cooking, eating, drinking, food-sharing and food-giving provide the basis for social relationships in societies. During the harvest time, cooking and eating may be occurred in the field. In the course of our survey in Turkish Thrace, we noticed recent broken pots in the field. These were the water pots that were probably accidentally broken during the harvest time and left in the field. Ceremonial activities may also have occurred in the field during the harvest time.

During tree-felling activities among Australian Aborigines, stone tools were left on the ground (Gould 1968). Probably during the tree-falling activities, broken axes were also left.

Archaeologists studying more complex societies have paid little attention to the idea of a minimum economic area associated with settlements. Flannery, who worked on semi-sedentary farming communities in the Teotihuacan valley, Mexico, noted that there are temporary camps some distance from a permanent village (Flannery 1976). According to Bintliff et al. minor concentration of finds around the settlements may be explained by short-lived farm sites (Bintliff et al. 1999).

Single finds or minor concentration of finds outside of the settlements may also be explained by rubbish management. The simplest mechanism for getting rid of refuse is throwing away or burying it in the immediate vicinity of dwellings or a particular area (Needham and Spence 1997). If refuse is deposited outside of the settlements, they will create a more or less a horizontal layer. If this layer was destroyed by erosion and ploughing, finds would have been spread over a large area.

II.D. SURFACE SURVEYS IN TURKISH THRACE

Our research since 1995 was divided into two stages; extensive survey and intensive survey. Extensive survey was carried out by systematic walking only the areas near springs, slight rises and some of the ploughed fields. Extensive survey was conducted in small areas in the Edirne region to ensure coverage of different altitudinal and contrasting environment variation as possible (Fig.II.1). This extensive survey roughly shows us site densities and settlement patterns in the region. In 1995, the basins of Tunca, Süloğlu and the area along the southern fringes of the Istranca Mountains, and in 1997 the confluence area of the Meriç and Ergene Rivers were investigated. I choose these areas because the Meriç and Tunca valleys provide the most accessible general route into central Thrace and further into Southeast Europe. The Edirne region is located in the confluence of the Meriç and Tunca valleys. These valleys were probably of considerable importance as a trade route.

The second stage was intensive survey, which involves two distinct procedures. The first involves the total collection of all surface artefacts within a 10x10 m. grid across the selected sites. These procedures show us the size and shape of the sites, and also artefact distributions in different periods. Artefacts collected from each squares were recorded on set forms under the heading of “sherd”, “chipped stone” and other small finds, such as “figurine”, “stone axe” etc.

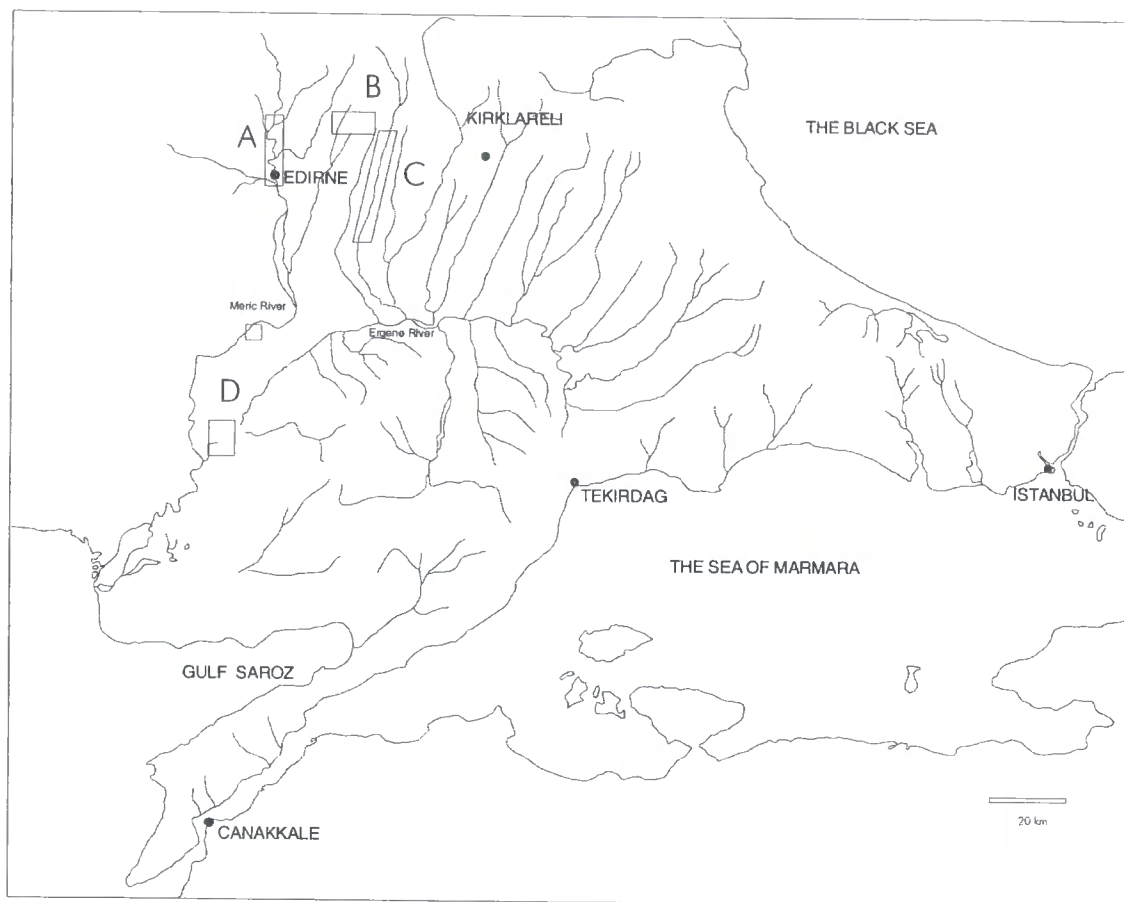


Fig II.1. Location map of extensive survey areas. A. The Tunca Basin. B. The area along the Southern fringes of the Istranca Mountains. C. The Süloğlu Basin. D. The confluence area of the Meriç and Ergene Rivers.

The second off-site survey procedure was designed to investigate the outer perimeter of sites. Mapping off-site densities and comparing them with the presence, size and density of sites and the topography, we can better understand the factors lying behind the formation of these remains and evaluate more effectively their significance to the study of settlement patterns and land-use. The field methodology is in many respects a further elaboration of that developed by the Neothermal Dalmatia Project (Chapman et al. 1996) and the Boeotia Survey Project (Bintliff and Snodgrass 1985). Most of Turkish Thrace offered an important advantage for the adoption of an off-site approach. Almost the whole of the landscape is covered with agricultural fields a few meters wide. This clear subdivision of the whole survey area into a patch-work of individual small units offered a framework for the collection of off-site information. Each field unit was examined by a group of 4 to 5 people, walking in parallel lines spaced 20 m or sometimes 10 m, depending on visibility. We accepted that each field walker has about 1 m front-visibility in each line. Thus every line was formed by 10 x 1 m “mini-transects” (Fig.II.3). A 100 x 100 m field unit was completed in ca. 10-12 minutes. A base map at the scale of 1:10.000

was used in the field. Each field-walking event was recorded on a Field Recorded Form (Appendix 1). Information categories recorded on this form were the name of the site, field no., date of walk, surface cover, visibility, orientation, total number of walking transects, artefact types, periods and notes. The collection of surface artefacts within 10 x 10 m grids was also recorded on a Grid-collection Form (Appendix 2).

II.D.1. Description of Extensive and Intensive Survey Areas

The Tunca basin (Fig. II.1. Area A): The Tunca River is a tributary of the Meriç River, which rises in the Balkan Mountains, descends southwards, and joins the Meriç River below the town of Edirne. It forms numerous meanders. Geologically, Holocene alluvium covers the basement of the Tunca River (Fig.II.2). Continental Neocene deposits occur on both sides of the river (Ternek 1987). There is no detailed soil map of the area. According to a general soil map, the flood-plain is covered by alluvial hydromorphic soils and the river terraces are covered by brown soils with rendzinas and grumsols. The flat flood plain of the Tunca River is flanked by low and high terraces. The terraces are now intensively cultivated with sunflowers and wheat. Göl Baba, west of the village of Büyük Döllük, is a former lake, which has been partially drained and now cultivated with rice.

The Tunca basin was partly investigated by the University of Istanbul in 1982 and 1986 (Özdoğan 1984: 66; 1988: 159). During our survey in 1995, six prehistoric sites were recorded (Fig. III.6. Area A) No uplands and tributaries were investigated(Erdoğu 1997: 274)..

The Süloğlu basin (Fig.II.1. Area C): The Süloğlu Stream is a tributary of the Ergene River, which rises near the village of Vaysal and runs from North to South. The bed of the Süloğlu Stream is very narrow, but constitutes a very fertile plain ca. 1-1.5 km in width. The bed of the stream is covered by Holocene alluvium. Both side of the Stream are flanked by low and high terraces that are propitious for settlement and agriculture. Geologically, the terraces are covered by undifferentiated continental Miocene and continental Pliocene (Fig.II.2). The terraces are now intensively cultivated with sunflowers and wheat. There is no detailed soil map of the area. According to a general soil map, the flood-plain of the Süloğlu Stream is covered by alluvial hydromorphic soils whose the basic feature is poor drainage. Brown soils with rendzinas and grumsols occur on the terraces.

The Süloğlu basin was first investigated by the University of Istanbul in 1982 (Özdoğan 1984: 66; 1985: 532). Our survey in 1995 was carried out by walking only stream terraces. Six prehistoric sites were recorded between the district centres of Havsa

and Süloğlu (Fig.III.6. Area C). With the exception of one site, most settlement is situated on the lower stream terraces, close to the stream (Erdoğu 1997: 278).

The area along the southern fringes of the Istranca Mountains (Fig.II.1. Area B): The southern foothills of the Istranca Mountain are usually gentle and very fertile and rich in sources of water. The area is also close to copper and iron beds in the North. Geologically, the area consists of Marine Oligocene, middle Eocene and undifferentiated continental Miocene (Fig.II.2). The marine Oligocene is differentiated into two units; the lower unit consists of marls and shales and the upper unit of lignite bearing sandstones. There is no detailed soil map of the area. According to a general soil map, most of the area is covered by brown soils with rendzinas and grumsols.

In 1995, only a small part of the area was investigated (Erdoğu 1997: 227). The survey was mainly carried out by walking based on information from the villagers. Five prehistoric settlements have been recorded in the area (Fig, III.6. Area B). The settlements are concentrated along small streams or perennial tributaries, on natural lines of communication and generally close to natural water sources.

The confluence area of the Meriç and Ergene Rivers (Fig. II.1. Area D): The confluence of the Meriç and Ergene Rivers lies in a large flat basin, which today, is covered by marshes and rice fields. Holocene alluvium is well-developed in this area covering basements of the whole area. In Prehistoric times, a deep gulf existed in this basin and during its recession, the basin was occupied by a lagoon and a series of shallow lakes, which were drained in the 1950s. Andesites and andesitic tuffs also occur in this area and the tuffs are covered by Pliocene sandstones (Ercan 1992). Most of the area is covered by alluvial soils.

This basin and its North were chosen as the focus of the 1997 survey, because it was an unknown and important area. Recent alluviation hindered site visibility to a very high degree.

Intensive survey was conducted in two separate areas: 1. Kavakli-Ortakçi area, some 20 km Northeast of the town of Edirne, along the Southern foothills of the Istranca Mountain; and 2. Tepeyani-Bağlarıçi area, some 20 km East of Edirne in the Süloğlu Basin. I chose the Kavakli-Ortakçi area because our extensive survey showed that the settlements of this small area were marked by series of abandonments and re-occupations. I thought this area can provide better evidence relating to past land use. The Süloğlu Stream constitutes a very fertile plain. It has rich in archaeological potential. For this reason, I decided to select a transect in the Süloğlu Stream.

The Kavakli-Ortakçi area is situated South of the village of Kavakli, on the west bank of the Çiftlik Stream, which is a tributary of the Iskenderköy (Fig.III.5). On the West

bank of the stream, there is a small narrow gulch. Approximately a 1x1 km square were investigated in the area.

The Tepeyani-Bağlarıçi area is located ca 1.5 km north of the village of Arpaç, on the eastern side of the Süloğlu Stream (Fig.III.4). Both sides of the Süloğlu valley are flanked by high and low terraces that are suitable for settlement and agriculture. The survey selected a transect, ca. 500 m wide and 1.4 km long, covering the high and low terraces and the floodplain.

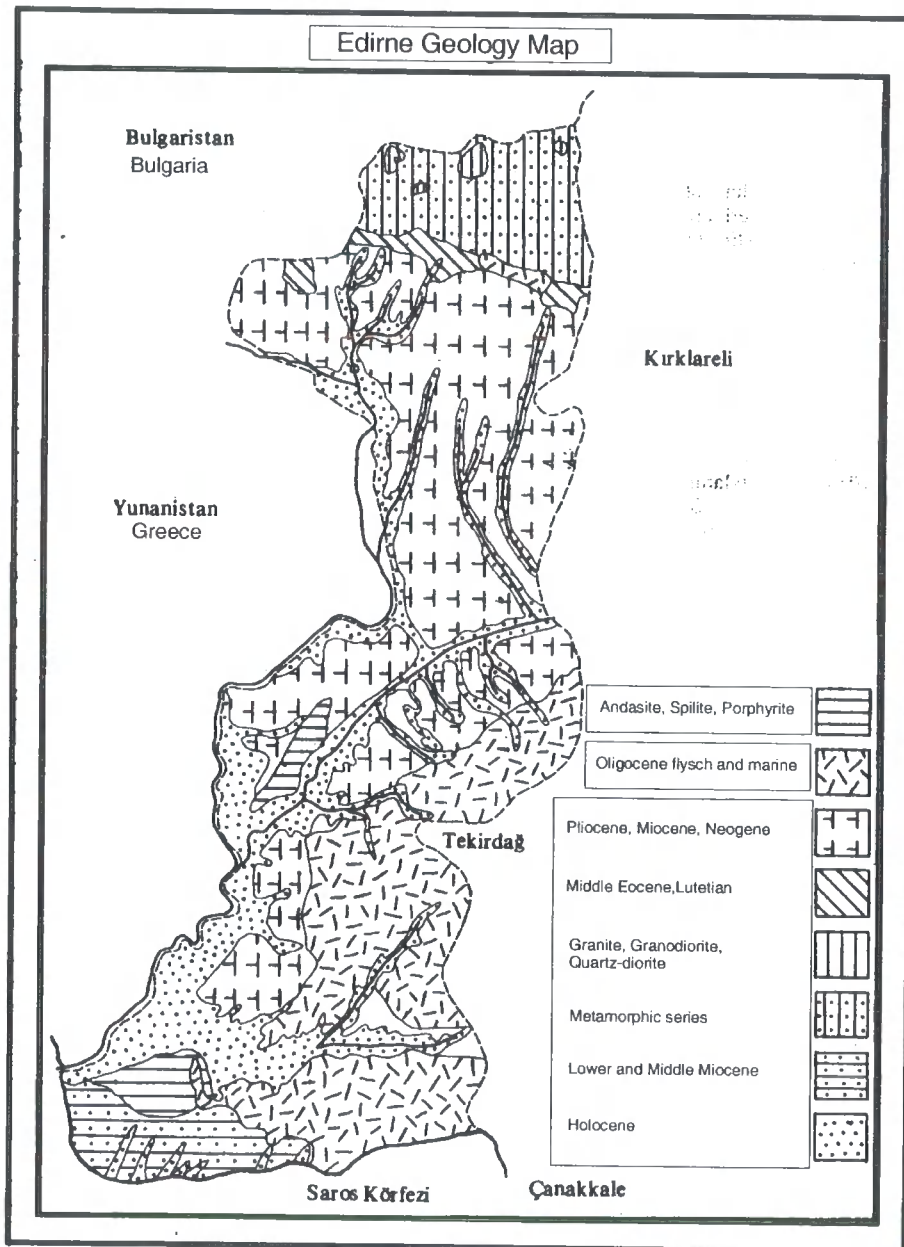


Fig.II.2. Geological map of the Edirne province.

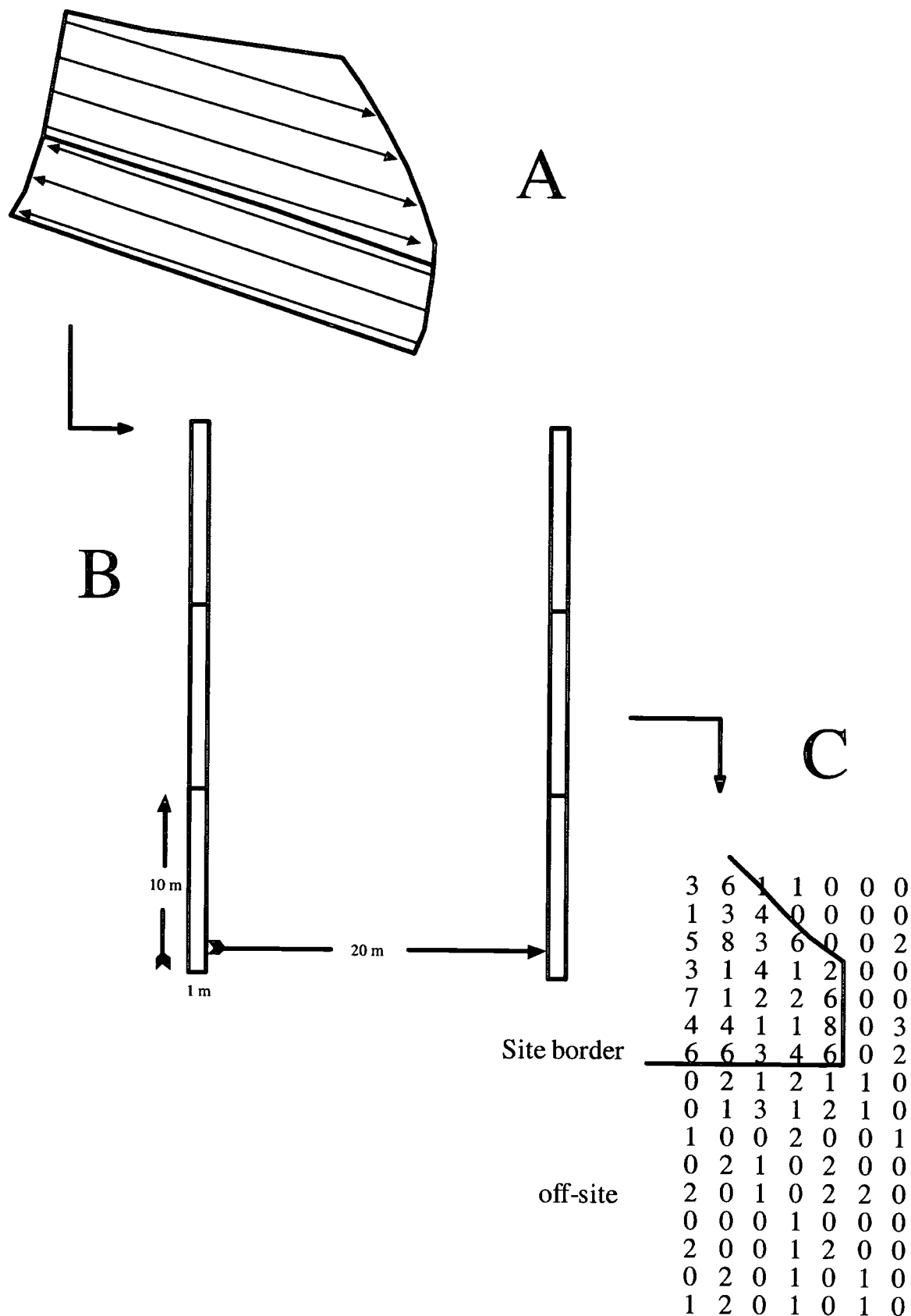


Fig.II.3. Schematic model of surface survey method in the Edirne region. A. Intra-site collection by transects in individual field units. B. Division of each field transect into 10 m - long mini-transects. C. Grid of pottery densities; each figure represents the number of sherds in a mini-transect. The site border is defined by a minimum of 6 sherds per mini-transect.

II.D.2. Block and Transect Survey Results

KAVAKLI-ORTAKÇI AREA (Plate XX: top): The main aim for the intensive survey in Kavakli-Ortakçi area was the very detailed mapping and recording of artefacts over the entirety of the survey area. The area consists of individual field-units. Each field-unit was examined by group of 4 to 5 people, walking parallel lines spaced 20 or sometimes 10 m. A total of 39 field-units of different shapes and dimensions, were examined. Each walking line was divided into 10 m-long individual units. The recorded artefacts density in each 10 m-long field units gave us the limit of the site and the main concentrations of finds. During the extensive survey, our criterion for defining a site was a minimum of 5 artefacts per square meter. However, during our intensive survey in the area a different method was followed to define the approximate border of a site, site concentration and off-site distribution. We accepted that each field walker has about 1 m front-visibility in each line. Thus every line was formed to 10 x 1 m “mini-transects”. Our criterion for defining a site border was a minimum 6 artefacts in 10 x 1 m “mini-transects”. If there were more than 10 artefacts in 10 x 1 m “mini-transects”, this would define as a site concentration or site core. The core of the site was directly linked to topography. We observed finds concentrations on slight rises. Each find outside of the site border was taken as off-site activity (Fig.II.3). By the end, we defined three features; finds concentration (the core of the site), site distribution and off-site distribution. In the Kavakli-Ortakçi area, four single-period sites were discovered in a 1 x 1 km area. A total of 556 off-site artefacts (23 chipped stone implements, 1 spindle whorl and 532 sherds) was collected.

The whole area in Kavakli-Ortakçi was under cultivation. Fields were cultivated by sunflowers and wheat and some fields were ploughed. The first part of survey was carried out in early summer, during which time the weather was always hot and cloudless, with no rain at all. The second part was carried out in early spring. The weather was warm with light rain. In early summer, the height of the wheat was very long, making surface collection impossible. The length of sunflowers was fine and the visibility in sunflower fields was excellent. At the end of the summer, after the harvest time, wheat fields allowed surface collection but visibility was still not excellent. The length of sunflowers was by then making surface collection difficult. However, surface visibility was still excellent. At the beginning, plough soil visibility was very poor. Visibility was undoubly improved by cleansing rainfall on fields ploughed in early spring. The surface team was charged with recording for each field an estimate of its ground visibility, expressed as a percentage of the surface devoid of vegetation. Four terms was used for defining surface visibility; “best”, “better than average”, “worse than average” and “worst” (Fig.II.4). The variable effects of surface vegetation should always be countered through the use of a “visibility count” in every field unit. For example, if the visibility in a field unit is “worst” and the

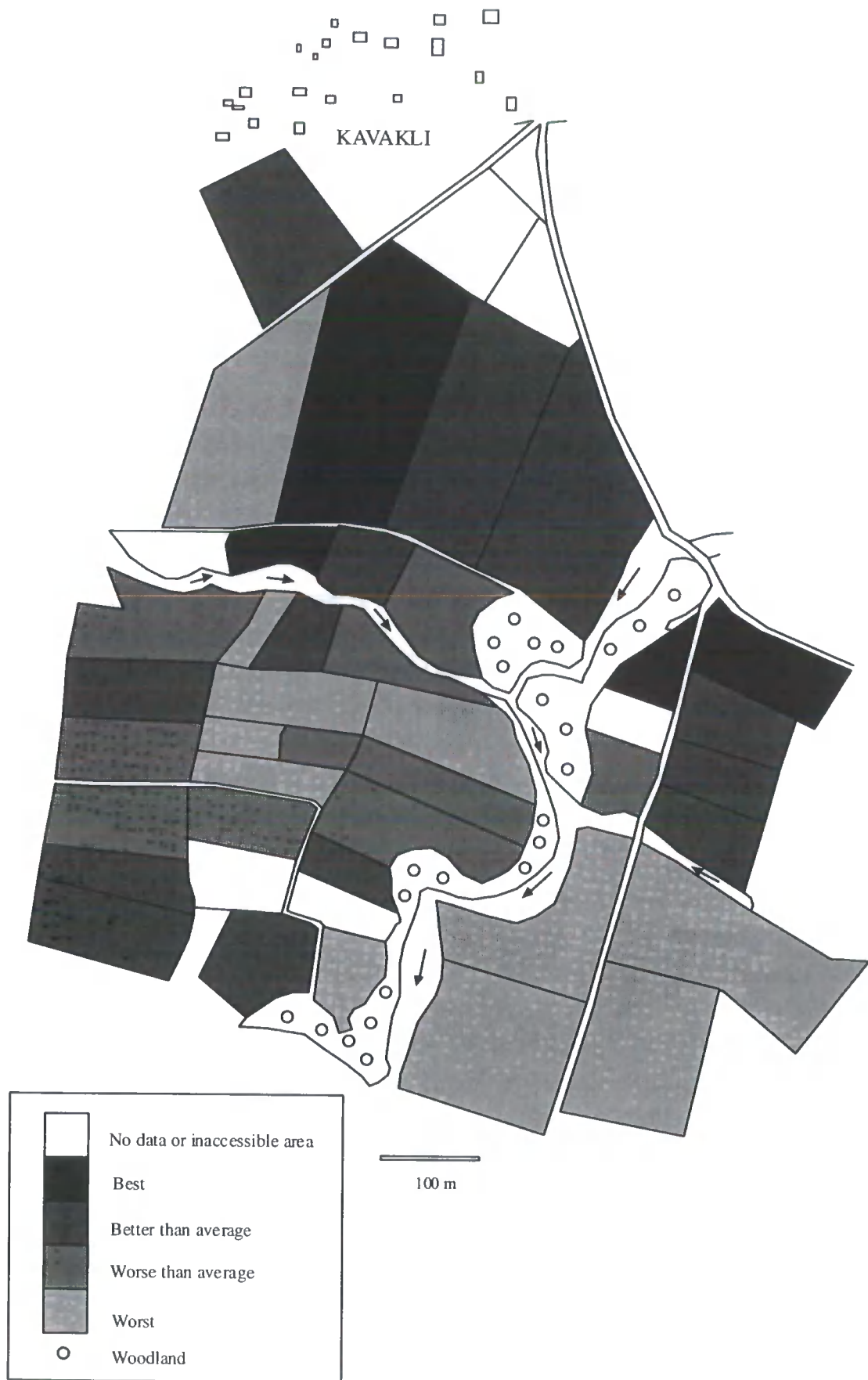
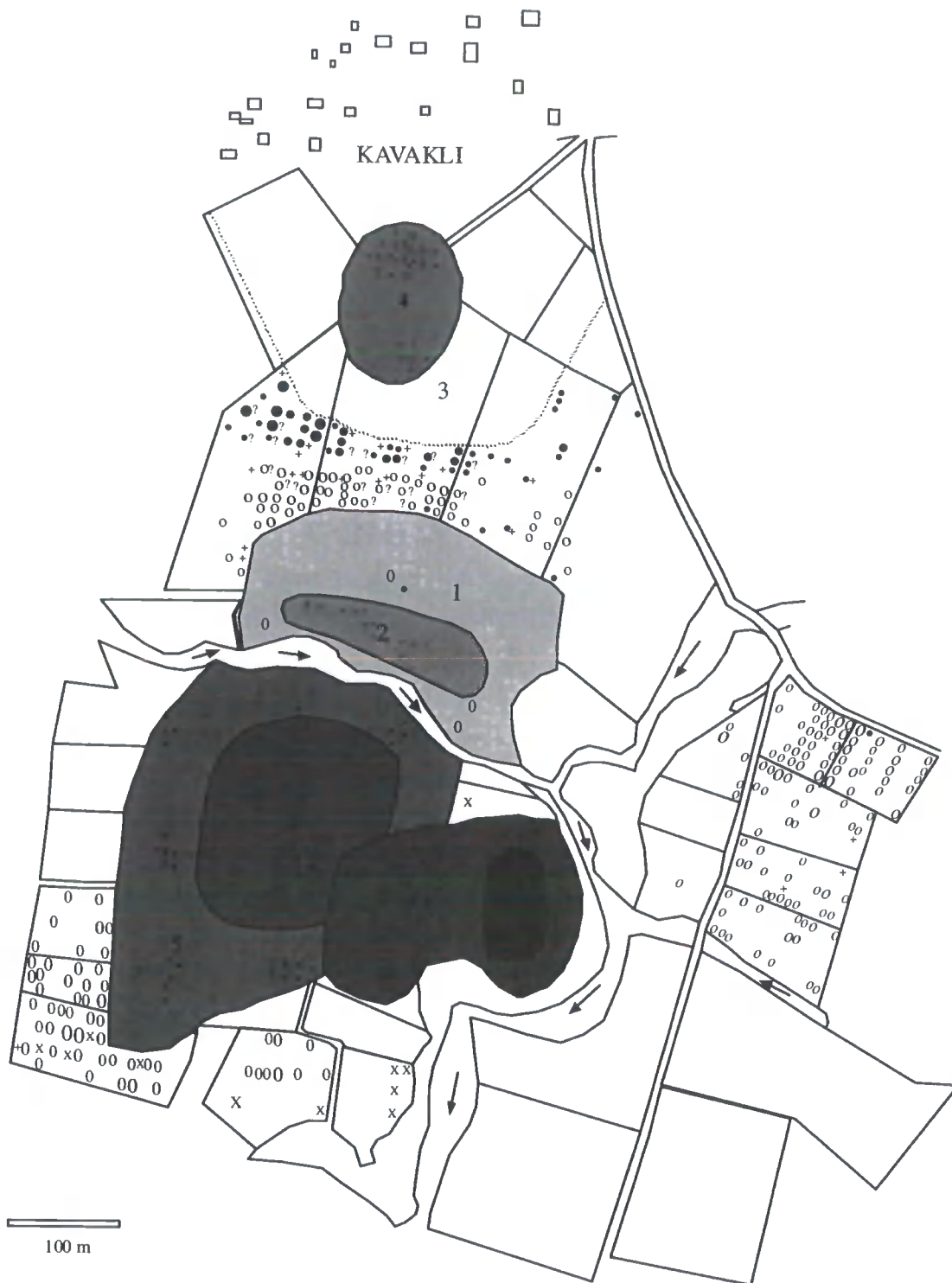


Fig.II.4. Relative ground visibility of fields in the Kavakli-Ortakçi area.



| | | | | |
|---|--|--|--|---------------|
| 1 | Karanovo VI site distribution | Off-site distribution of Karanovo VI and Pre-Cucuteni / Maritsa sherds | Off-site distribution of EBA II sherds | EBA I sherds |
| 2 | Karanovo VI finds concentration | o • 1 | o 1 | o 1 |
| 3 | Pre-Cucuteni / Maritsa Site distribution | o • 2 - 3 | o 2 - 3 | o 2 - 3 |
| 4 | Pre-Cucuteni / Maritsa finds concentration | o • 4 - 5 | o 4 - 5 | o 4 - 5 |
| 5 | EBA II site distribution | Off-site distribution of LBA-EIA sherds | Kalojanovec type of sherds | Chipped stone |
| 6 | EBA II finds concentration | x | * | + |
| 7 | LBA / EIA site distribution | | | |
| 8 | LBA / EIA finds concentration | | | |

Fig.II.5. Distribution of sites and off-site finds in the Kavakli-Ortakçi area.

sherd counted was 4, we will add other 4 for correct visibility. If the visibility in a field-unit is “worse than average” and the sherd counted was 4, then we will add 2.

The results of intensive survey in the Kavakli-Ortakçi area showed that prehistoric settlements were marked by a series of abandonments and re-occupations (Fig.II.5). In the Kavakli-Ortakçi area, the settlement history went back to the Late Neolithic. Kalojanovec-type of pottery is the earliest find to the South of the gulch. We suggest that, during this period, the settlement was small. Chalcolithic settlements were situated to the North of the stream and are marked by Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI assemblages. A Pre-Cucuteni / Maritsa (= Kocatepe) settlement was found just South of the village, far from the stream and the gulch. It is ca. 300 x 250 m in size. Single finds of Pre-Cucuteni / Maritsa (= Kocatepe) spread nearly as far South as the gulch. A Karanovo VI settlement is located ca.100-150 m Southwest of the Pre-Cucuteni / Maritsa (= Kocatepe) settlement, close to the gulch. It is ca. 300 x 150 m in size and less than 1 m in height (Erdoğan 1999 b). On the East bank of the Çiftlik stream, we found a small concentration characterized by Early Bronze Age I pottery together with two Pre-Cucuteni / Maritsa (= Kocatepe) and one Karanovo VI pottery. However, the sherds are scrappy and heavily worn. Thus it is not clear whether EBA I material constitutes actual occupation or off-site activity. The Early Bronze Age II settlement was found on the South side of the gulch. It is ca. 250 m in diameter and ca. 5-6 m in high. Single finds of EBA II were found on the Southern part of the settlements and also on the North side of the gulch. There is a hiatus in settlement between the Early Bronze Age II and the Late Bronze Age period. A settlement of the Late Bronze Age-Early Iron Age was found at the confluence of the stream and gulch. Single finds of the Late Bronze Age-Early Iron Age occurred to the South of the gulch. The Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI) settlements in the area were also investigated using 10 x 10 m grids.

Most of the off-site artefacts were very small, scrappy and worn. The Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) sherds were easiest to recognise. They were thick, greyish in colour and sometimes decorated. However, some wares of the Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI periods were similar. Karanovo VI sherds were the most difficult to recognize, because small Karanovo VI and EBA sherds look similar. However, most of the EBA off-site artefacts were concentrated in particular areas. Early Iron Age sherds were also different from other finds; sharp black, low fired, sometimes decorated and were easy to recognize on the surface. To sum up, we can say 70% of off-site artefacts were securely dated. The remaining 30% should be dated to either the Chalcolithic or the Early Bronze Age.

The Chalcolithic, (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI) periods give an off-site density of 1 to 3 sherds per 10 x 1 m “mini-transects” and an overall mean of 0.4 to 0.5 per 100 square meters. On the East bank of the Çiftlik stream, we found a

small concentration characterized by the EBA I pottery, as mentioned above. It is not clear that this EBA I material constitute actual occupation of off-site activity. The EBA I gives an off-site density of 1 to 5 sherds per 10 x 1 m “mini-transects” and overall mean of 1.2 sherds per 100 square meters. EBA II gives an off-site density of 1 to 5 sherds per 10 x 1 m “mini-transects” and overall mean of 0.6 to 1.0 sherds per 100 square meters. The Late Bronze / Early Iron Age gives an off-site density of 1 to 2 sherds per 10 x 1 m “mini-transects” and over all a mean of 0.2 sherds per 100 square meter.

Single finds of Pre-Cucuteni / Maritsa (= Kocatepe) spread almost as far South as the gulch. To the East the finds go as far as ca 100 m and stop. Only two small sherds of Pre-Cucuteni / Maritsa (= Kocatepe) were found on the Eastern part of the Çiftlik stream. The Karanovo VI single finds were found immediately around the settlement. Only one sherd was identified on the Eastern side of the Çiftlik stream. Because of poor visibility in the Eastern part of the Chalcolithic settlements, we have not recognized many off-site artefacts. The majority of the EBA II single finds was found on the South-Eastern side of the EBA II settlement. To the North of the gulch and the Southern part of the EBA II settlement, there is an area with a far smaller number of finds. Although the visibility was “better than average” and “worse than average”, we have not find even a single sherd on the Eastern part of the EBA II settlement.

Artefact discard on the landscape around the settlements may be explained by several processes such as manuring, seasonal use of field huts or facilities, rubbish disposal, miscellaneous breakage etc., as mentioned above. In the Kavakli-Ortakçi area, the Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI) off-site artefacts were found immediately outside of the settlements, which were probably related to ancient land-use. In non-tell sites, arable and grazing land lies in the immediate vicinity of the houses (Chapman 1989: 38). Wilkinson (1982) and Gaffney and Tingle (1989) have interpreted off-site artefacts as resulting from ancient manuring practice. The artefacts were spread to the fields by transporting manure from their residential area. Most of the Chalcolithic off-site were sherds and they were very small in size. Only 11 flint implements were found. Mostly 1 or 2 artefacts were found per 10 x 1 m “mini-transects”. Two single-period Chalcolithic settlements are close each other and, in both, the core of the settlements lies on a slight rise. However, rises less than 1 m high could not produce cumulative artefact movement. Some of the off-site artefacts may be displaced by ploughing or washing down from this slight rise by heavy rain.

The EBA I artefacts on the East side of the Çiftlik stream may interpreted as a farm or a seasonal field structure. Two small pieces of daub were also collected.

The off-site artefacts of EBA II were found mainly to the Southwest of the main settlement. In the East, we did not recognize any off-site artefacts. When we interpret off-site artefacts as resulting from the deposition of refuse in one place, we have not found any

artefacts except scrappy sherds. There was only one flint implement. One to four EBA II off-site artefacts were found per 10 x 1 m “mini-transects” on the Southwest. When we interpret off-site artefacts as resulting from ancient manuring practice, then we can face the problem of land holding. Why did the EBA II settlers not use the Eastern land for agricultural purposes?

We can make a comparison of off-site artefact densities from other intensive surveys. In Boeotia, off-site pottery scatters formed an almost unbroken carpet throughout the landscape (Bintliff and Snodgrass 1985 ; 1988). Most of the off-site material in Boeotia was dated to the Roman and Medieval periods. The off-site values for Boeotia survey lie between 0.4 and 45+ sherds per 100 square meters (Cherry et al. 1991). The upper ends of the range have been interpreted as “haloes” around the settlements. For comparative purposes, in the Kavakli-Ortakçı area of Turkish Thrace, Roman off-site (?) pottery scatters also formed an unbroken carpet throughout the landscape. The mean value for Roman pottery in the Kavakli-Ortakçı area is 1.0 sherd per 100 square meters. The value for Chalcolithic pottery in the Kavakli-Ortakçı area lies between 0.4 to 0.5 sherds per 100 square meters and the value for EBA pottery lies between 0.6 to 1.0 sherds per 100 square meter. Our values for Prehistoric pottery are very close to the value 0.5 sherds per 100 square meters reported in the Keos survey (Cherry et al. 1991: 46) and that of 0.7 sherds per 100 square meters reported in Calabria, Italy (Hodder and Malone 1984: 127). In the Keos and Calabria surveys, most of the off-site artefacts were dated to Roman period.

TEPEYANI-BAĞLARIÇI AREA (Plate XX: bottom): There were four aims of the transect survey in Tepeyani-Bağlarıçı area: 1. the examination of an area field by field; 2. the recording of artefacts over the entirety of the survey area; 3. the definition of site and off-site zones and the comparison of their finds; 4. the definition of the chronological range of artefacts. In the Tepeyani-Bağlarıçı area, a transect ca. 500 m wide and 1.4 km long was designed to cover different landscape units; the flood plain, low and high terraces and the upland. The flood-plain is 450 m wide while the lower and upper terraces are ca. 500 m wide. The upland is 200 m wide in this area. The surveyed area consists of 79 individual field-units of different shapes and dimensions. Each field-unit was examined by a group of 4 to 5 people, walking parallel lines spaced 20 or sometimes 10 m. Each walking line is divided into 10 x 1 m “mini-transects”, as explained above. Our criterion for defining a site was a minimum of 5 artefacts per square meter. Our definition and criterion for defining the site border, site concentration and off-site distribution, which was used Kavakli-Ortakçı area, were also used for the Tepeyani-Bağlarıçı area. In Tepeyani-Bağlarıçı area, a Chalcolithic and Late Bronze / Early Iron Age settlements were found only on the first terrace of the Süloğlu Stream. A total of 36 off-site artefacts (10 chipped stone implements, 1 stone axe and 25 sherds) was collected.

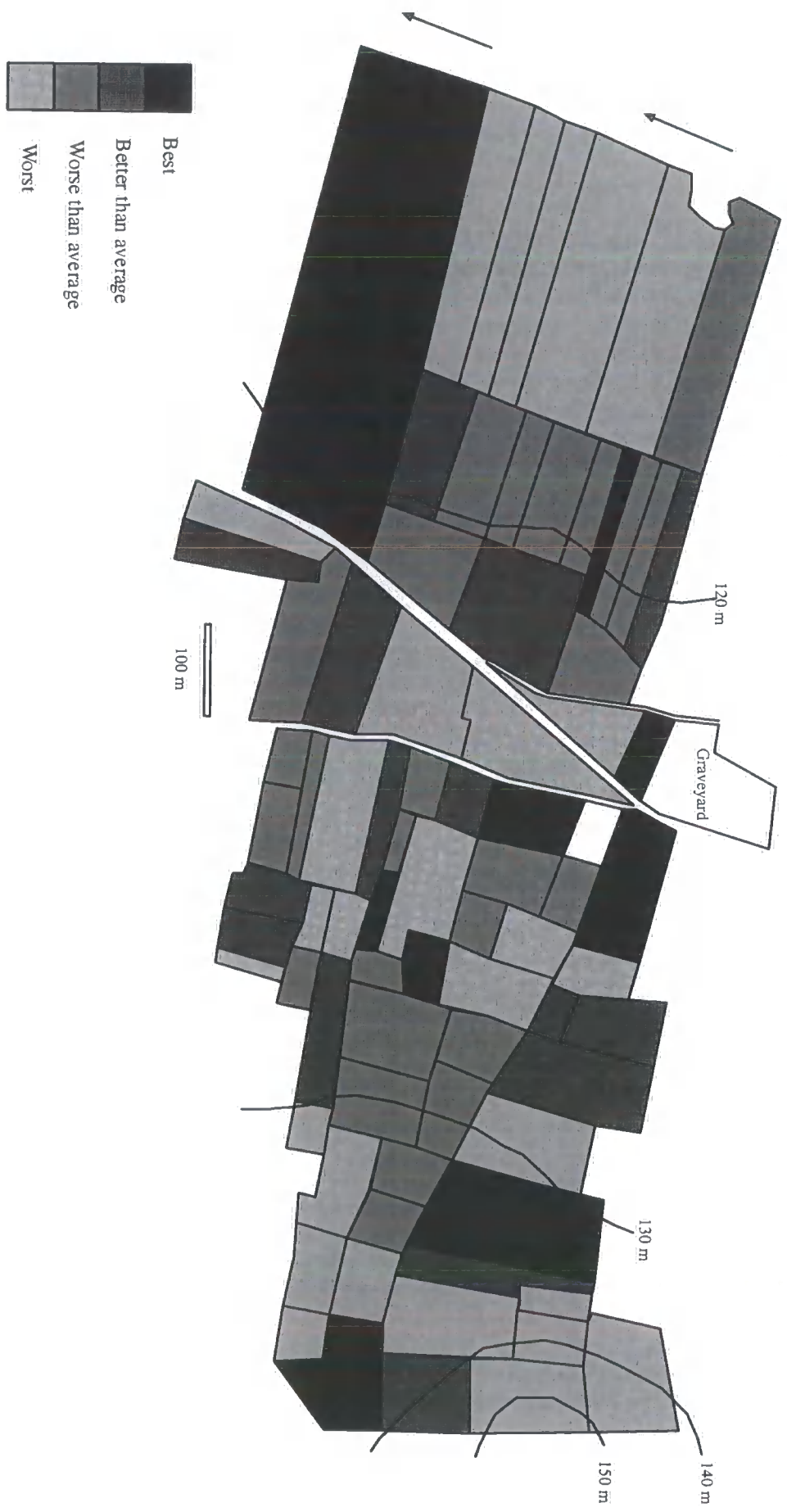


Fig.II.6. Relative ground visibility of fields in the Tepeyanı - Bağlarıçı area.

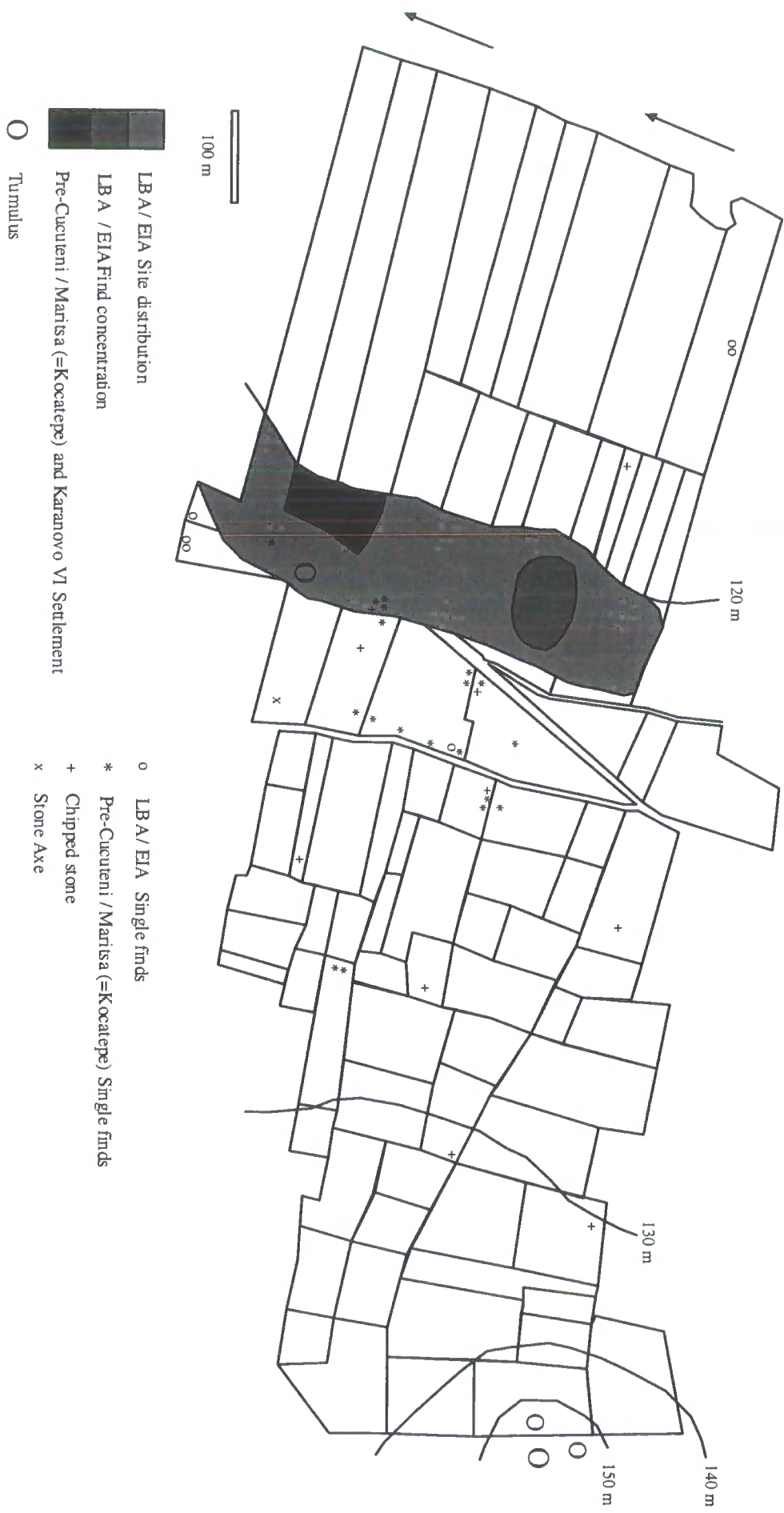


Fig.II.7. Distribution of sites and off-site finds in the Tepeyani-Bağlarıcı area.

The whole Tepeyani-Bağlariçi area was under cultivation. Fields were cultivated by sunflowers, wheat and corn and some fields were ploughed. The first part of survey was carried out in early summer, during which time the weather was always hot and cloudless, with no rain at all. The second part was carried out in early spring. The weather was warm with light rain. In early summer, the height of the wheat and corn was very long, making surface collection impossible. The length of sunflowers was fine and the visibility in sunflower fields was excellent. At the end of the summer, after the harvest time, wheat fields still allowed surface collection. However, the visibility was still not excellent. At the end of the summer, visibility in the cornfields was very poor. The length of sunflowers now made surface collection difficult. However, surface visibility was still excellent. At the beginning, plough soil visibility was very poor. Visibility was undoubtedly improved by cleansing rainfall on fields ploughed in early spring. Four terms was used for defining surface visibility; “best”, “better than average”, “worst than average” and “worst” (Fig.II.6).

The Chalcolithic settlement is marked by Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI assemblages. It is a small site ca. 80 x 60 m in size. The perimeter of the settlement has been damaged by the main Süloğlu-Havsa road. The Late Bronze / Early Iron Age settlement is more than 500 m long. Finds are concentrated in an area ca. 90 x 90 m in the North. In three different parts of the survey area, we found small concentrations of Hellenistic-Roman pottery. Four tumuli were recorded in the transect; three on the upland and one located on the first terrace, on the Eastern side of the main road. Single finds, including Pre-Cucuteni / Maritsa (= Kocatepe), Iron Age pottery and chipped stone, were recorded in the transect (Fig.II.7). The Chalcolithic settlement was also investigated using 10 x 10 m grids.

The off-site artefacts were medium in size and only some of them were worn. The both Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Late Bronze / Early Iron Age sherds were easily recognised. Pre-Cucuteni / Maritsa (= Kocatepe) sherds were thick, greyish coloured and sometimes decorated. Late Bronze / Early Iron Age sherds were black, low fired and sometimes decorated. In the Tepeyani-Bağlariçi area, 100% of off-site artefacts were securely dated. We were very surprised that no Karanovo VI off-site artefacts were found. Karanovo VI finds on site are also small in quantity, ranging between 10 to 40 sherds per 100 square meters.

The Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) gives an off-site density of 0.06 to 0.14 sherds per 100 square meter. The Late Bronze / Early Iron Age gives an off-site density mostly of 0.06 sherds per 100 square meter. Most of the single finds were found on the low terrace. Only two pieces of Pre-Cucuteni / Maritsa (= Kocatepe) sherds and three flint implements were recorded on the high terrace, and only two pieces of Late Bronze / Early Iron Age sherds and one flint implement were found on the flood-plain.

The off-site artefacts may be explained by several processes as mentioned above. I shall discuss some of these processes, such as manuring, miscellaneous breakage and seasonal huts etc. The bed of the Süloğlu Stream is very narrow, constituting a flood-plain ca. 450-500 m on both sides. The flood plain of Süloğlu Stream is very fertile and we suppose that the flood-plain was used for agricultural purposes during the prehistoric period. According to Wilkinson (1982) and Gaffney and Tingle (1989), the presence of large amounts of pottery in the fields around a settlement is associated with manuring activities. However, in the Tepeyani-Bağlarıçi area, we do not recognize any Chalcolithic off-site artefacts on the flood-plain. The absence of off-site artefacts in the flood-plain may be explained in two ways. First, alluvium is carried by the Süloğlu stream every year and alluvial deposits probably covered the flood-plain. Second, the flood-plains, in general, are fertile areas that need no manuring. On the other hand, the existence and intensity of manuring activities in Neolithic and Chalcolithic periods are still open issues.

Although the Chalcolithic site of Tepeyani is small, the artefact density is very high. When we compare on-site and off-site densities, off-site density is notably low. There are minor off-site artefact concentrations of Pre-Cucuteni / Maritsa (= Kocatepe) artefacts; two on the low terrace and near the main road, one on the high terrace, ca 500 m far from the settlement and other is located on lower terrace to the North, ca. 300 m far from the settlement. Small off-site concentrations may be explained by seasonal use field huts. Two small concentrations near the main road may also be explained by artificial secondary concentrations near the road, as a result of road construction.

A broken axe was found ca. 150 m far from the settlement. The axe was broken longitudinally, so that reuse impossible. Probably the axe was broken during tree-felling activities and left on the ground.

Small quantities of Late Bronze / Early Iron Age off-site finds (6 sherds) were found immediately outside the settlement. On the other hand, with the exception of the settlement core, artefact density in this period is very low. The site distribution area of the settlement gives a mean density of 10-15 sherds per 100 square meters.

II.D.3. 10 x 10 m Grid-collecting Results

The results of the 10 x 10 m grid-collecting survey enable the identification of the principal internal foci and boundaries of a site and give us a better understanding its shape and extent. Artefacts collected from each grid were recorded on forms under the headings of pottery, chipped stone, stone axe, figurine etc. A 10 x 10 m grid-collecting survey, involves three distinct procedures. The first stage was to extract the total number of sherds of each period, as well as chipped stone for whole site. This gave a good first impression as to the amount of dated material collected from the site and the number of chronological

periods contained within it. The second stage was to put the number of sherds of each period within each grid, and creating a gridded-plan map using computer programs. The third stage was to create a contour plan, using computer programs. That gave material distribution in non-collecting grids and to see complex picture of the site. The "Sigmaplot 2000" program was used for drawing contours. Intra-site gridded collection shows us the size and shape of the site and the intensity of discard in different periods. The total of known Neolithic and Chalcolithic sites in the Edirne region is 14 and nine of them were examined intensively, using 10 x 10 m grids. Three sites - Kumocağı, Çardakalti and Kocatepe have been destroyed since their discovery. Karabaş is located in the Military zone and Kaldırım is located near the Turkish-Bulgarian border. These factors made intensive surface collection impossible on these sites.

KAVAKLI 1: Kavakli was first discovered in 1995 during our extensive survey in the area (Erdoğu 1997:277). The extensive survey was mainly carried out by unsystematic field walking based on information from the villagers. The finds were collected unsystematically in foci of high finds concentration. In the 1995 survey, Chalcolithic (Karanovo VI) and Roman pottery were found.

In 1999-2000, Kavakli 1 was examined intensively, using both block and alternately spaced 10 x 10 m quadrates. Before that, each field unit in the Kavakli area was investigated using systematic field walking techniques as mentioned above. This procedure indicated the spatial shape and extent of the site. The site covers an area of ca. 300 x 150 m and finds are concentrated in an area some 200 x 80 m. Kavakli 1 is spread over six different field units. Fields were cultivated by sunflowers and wheat and some fields were ploughed. With the exception of one field in the core, the visibility was "best" or "better than average" in all field units. The core of the settlement was investigated over an area of 100 x 50 m by a set of 24 10 x 10 m quadrats (Fig.II.8.a). During systematic field walking, it became clear that large quantities of archaeological material were concentrated in the Western part of the site. This information led us to the choice of a survey grid of 5 x 5 m, covering almost the whole Western field unit. The other field unit in the core was sampled by alternate 10 x 10 m quadrats. The third field in the core was not investigated because of poor visibility. In Kavakli 1, both prehistoric materials and Roman sherds were collected. All of the prehistoric material was dated to the Chalcolithic (Karanovo VI), period of the Balkans. A total of 761 sherds and 51 chipped stone implements was collected.

As a result of the 10 x 10 m grid survey, three distinct concentrations of material were observed - two in the Northern part and one located in the Eastern corner (Fig.II.8.b). Concentration 1 in the North gives a density of 70 sherds per 100 square meters falling to 40 sherds. Concentration 2 in the North gives a density of 60 sherds per 100 square meters falling to 40 sherds. Very small fragments of wall plaster were also noted in concentration

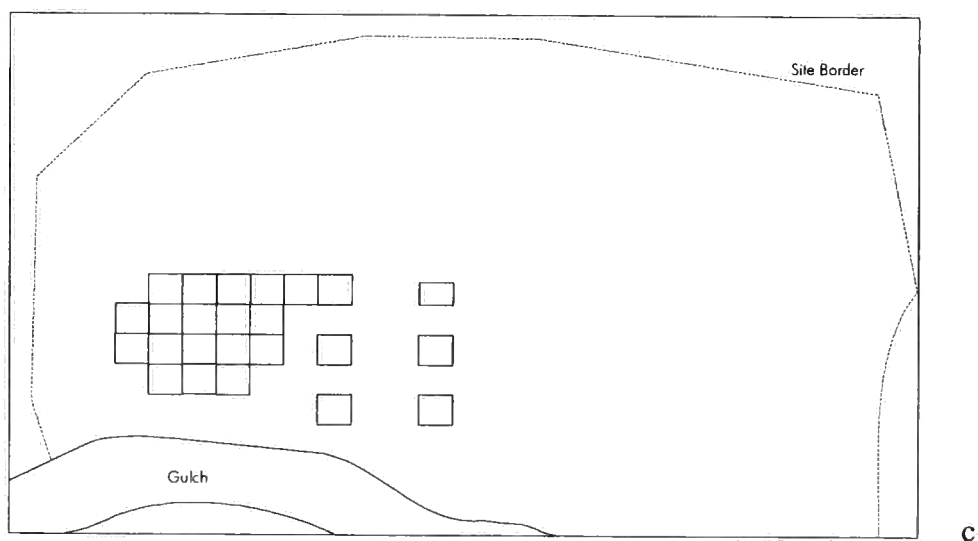
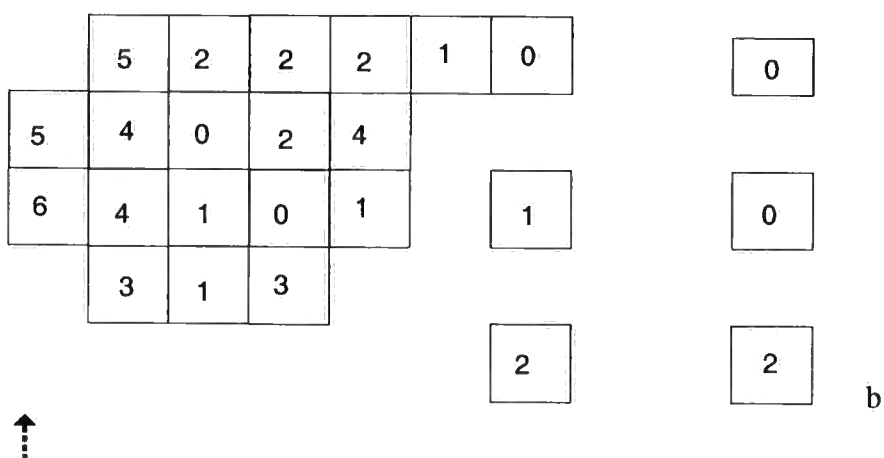
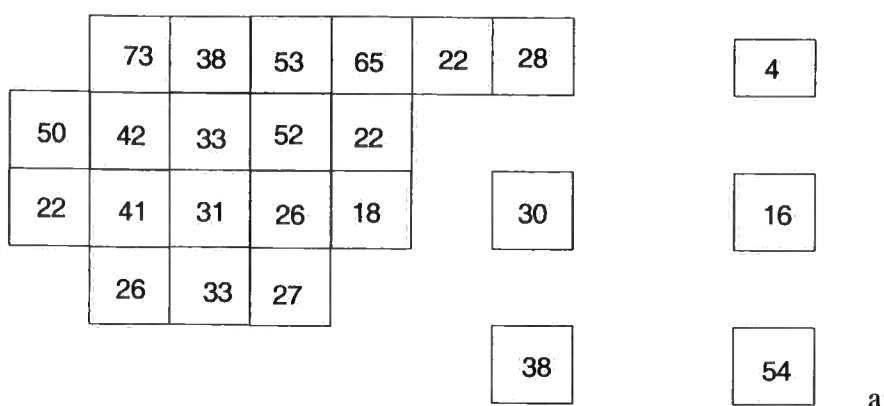


Fig.II.8.a. Kavakli 1; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

Kavakli 1

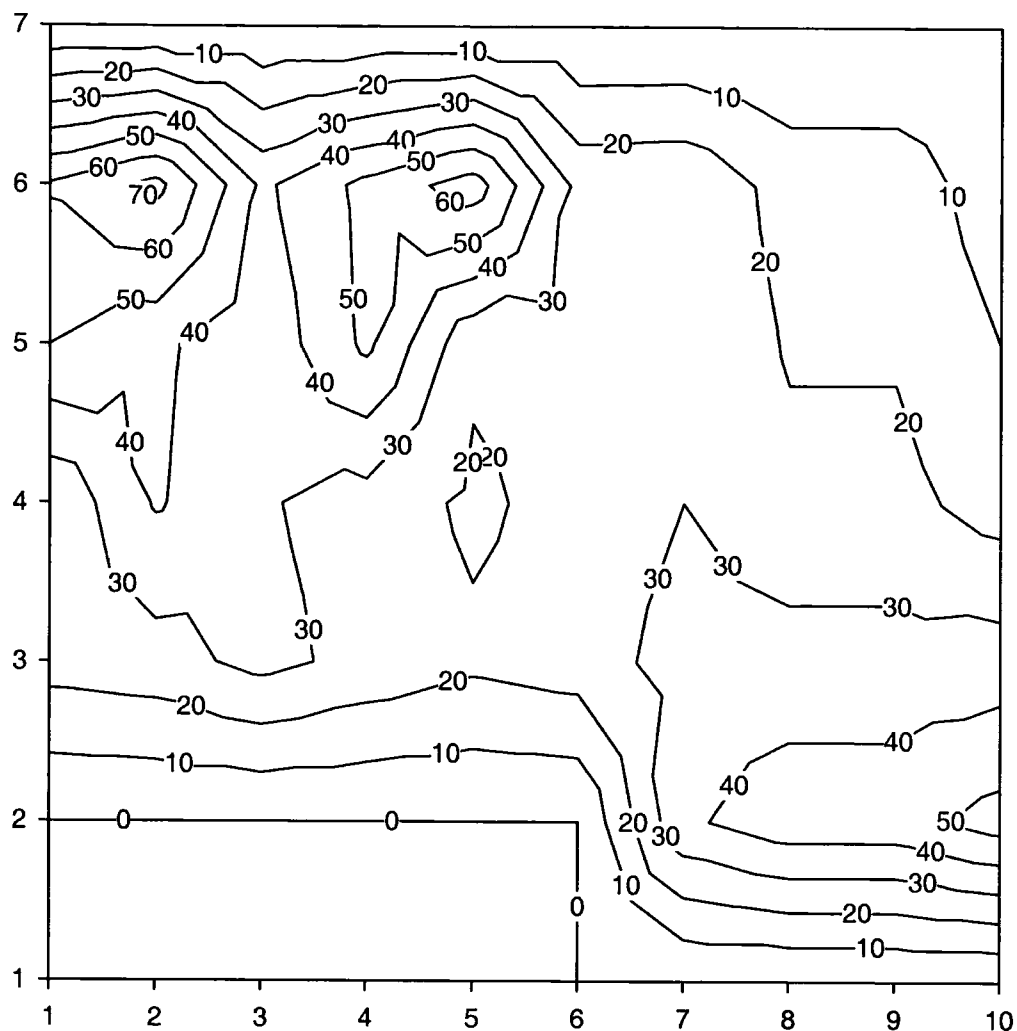


Fig.II.8.b. Interpolated contour plan of Kavakli 1: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

Kavakli 1

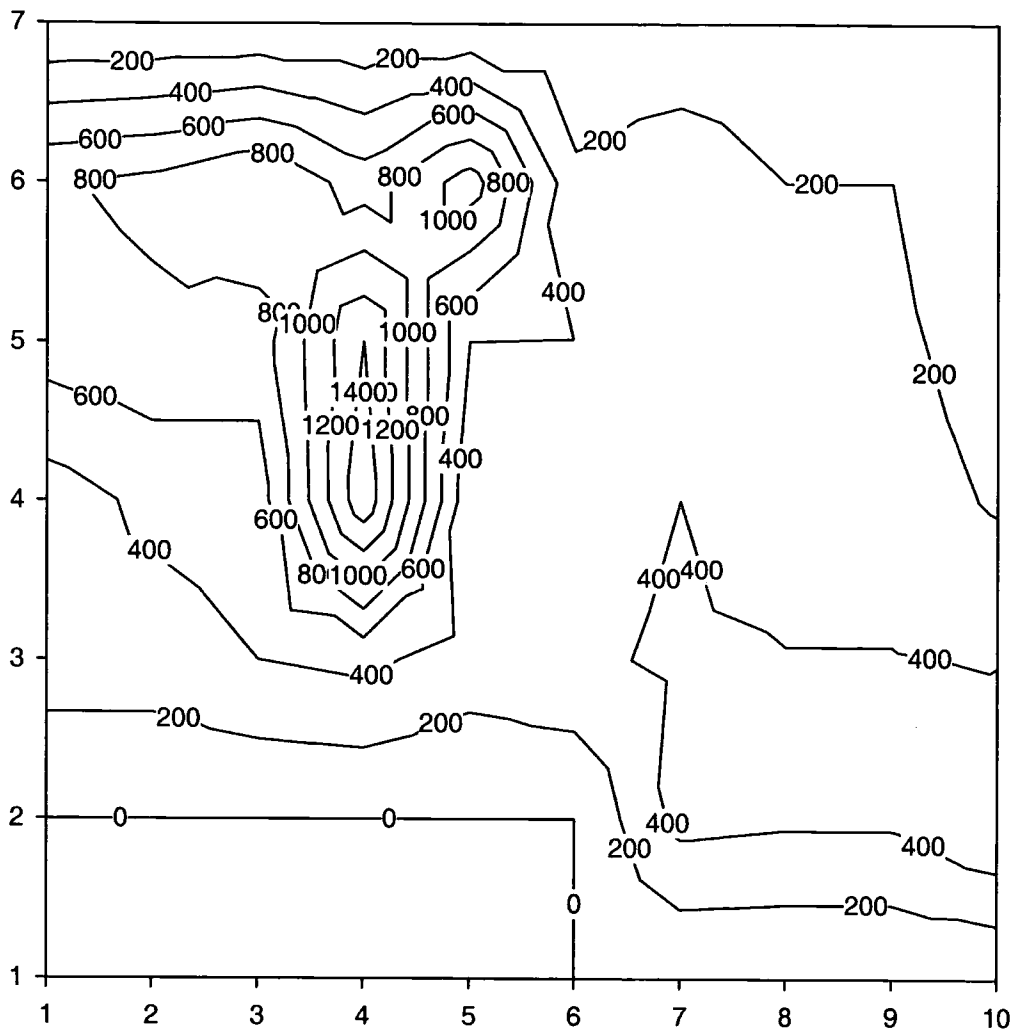


Fig.II.8.c. Interpolated contour plan of Kavakli 1: Pottery weight.

areas. A grinding stone and animal bones were also noted. Concentration 3 is located in the South-Eastern corner, with a density of 50 sherds per 100 square meters falling to 40 sherds. The most of the sampled area has average of 20 sherds per 100 square meters. The sherd density is falling off until 10 sherds per 100 square meters. Most of the flint implements were found in the Western part.

In Kavakli 1, there is a contrast between sherd distribution and sherd weight (Fig.II.8.c). The main sherd weight is concentrating in the middle part of the sampled area, close to the West. It is giving a density of 1.4 kg per 100 square meters falling to 0.2 kg. Another concentration falls in the North, with a density of 1 kg per 100 square meters. The differentiation between sherd distribution and sherd weight can be explained by a small number of sherds with very high weight. The weight ratio in weight concentration area is 59.6 per 100 square meters while average ratio is 16 per 100 square meters in the sampled area.

The prehistoric finds from Kavakli 1 are homogeneous, suggesting a single phase of habitation. The recorded artefact distribution indicates a multiple-focus concentration pattern. The concentration artefacts in Kavakli 1 may be explained by a “site concentration” principle. The residents who lived in a Balkan village kept their discarded objects in outside areas between and beyond their houses (Chapman 2000b). The discarded objects were ever-present, at least until they were trodden down into the ground surface. For a long period of time, residents were living in the discard surrounding their living area. The house-unit with their discard creates very high finds concentrations. Ethnographical data for “concentration principle” were also given by Murray (1980). In Kavakli, different foci of concentration may indicate the house-units.

TEPEYANI: Tepeyani was first discovered in 1995 during our extensive survey in the Süloğlu basin (Erdoğan 1997:279). The extensive survey was mainly carried out by unsystematic walking on stream terraces. Tepeyani is a small site ca. 80 x 60 m in size and it is situated on the first terrace of the Süloğlu Stream. In 1995, the Chalcolithic, Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI sherds together with some Karanovo III sherds² were collected unsystematically.

In 1999-2000, an area of 70 x 40 m was examined intensively, using mainly a block of 13 10 x 10 m quadrats (Fig.II.9.a). This procedure gave us a better understanding of its shape and extent. The site covered two different field-unit and both were ploughed. The visibility was best. During the 1999-2000 season, the Chalcolithic, Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI finds were recovered. Although, a handful of Karanovo III pottery was present in early surveys, it was absent in 1999-2000. The majority of finds was

² In my 1995 article, I published two white painted sherds from this site together with white on black painted sherds from Kumocagi /Avariz. As I mentioned in note 8, they should be dated to the Karanovo VI-Gumelnita period. Now, I am sure that they are dated to the Karanovo VI-Gumelnita period of the Balkans.

18

2

| | | | |
|----|----|----|----|
| 20 | 32 | 44 | 54 |
| | 59 | 91 | 83 |
| 22 | 48 | 93 | 96 |

| | | | |
|----|----|----|----|
| 12 | 25 | 30 | 28 |
| | 27 | 37 | 39 |
| 17 | 25 | 33 | 47 |

19

9

a

b

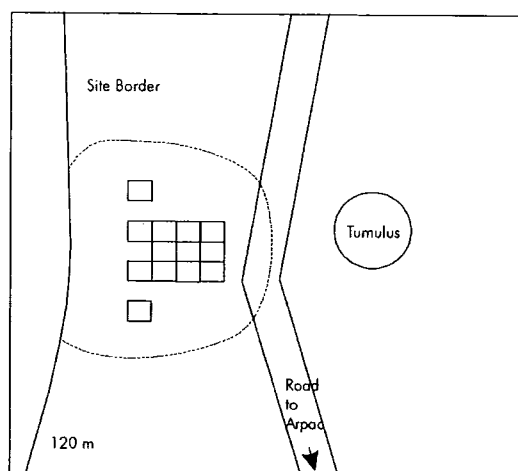
0

| | | | |
|---|---|---|---|
| 2 | 4 | 5 | 6 |
| | 5 | 4 | 6 |
| 2 | 2 | 6 | 3 |

1



c



d

Fig.II.9.a. Tepeyani; (a) absolute Chalcolithic (Kocatepe) sherd counts, (b) absolute Chalcolithic (Gumelnița) sherd counts, (c) chipped stone counts (d) sketch plan of sampled area.

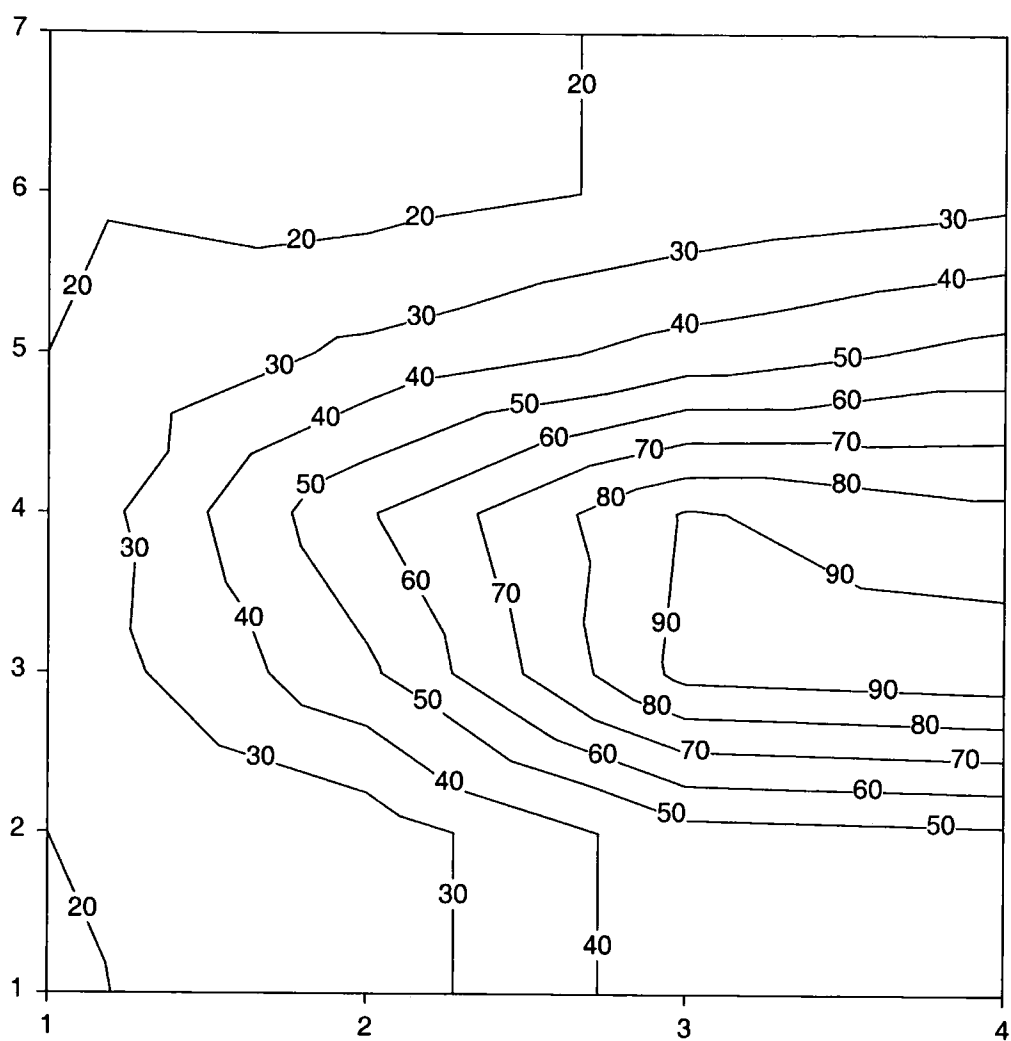


Fig.II.9.b. Interpolated contour plan of Tepeyani: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).

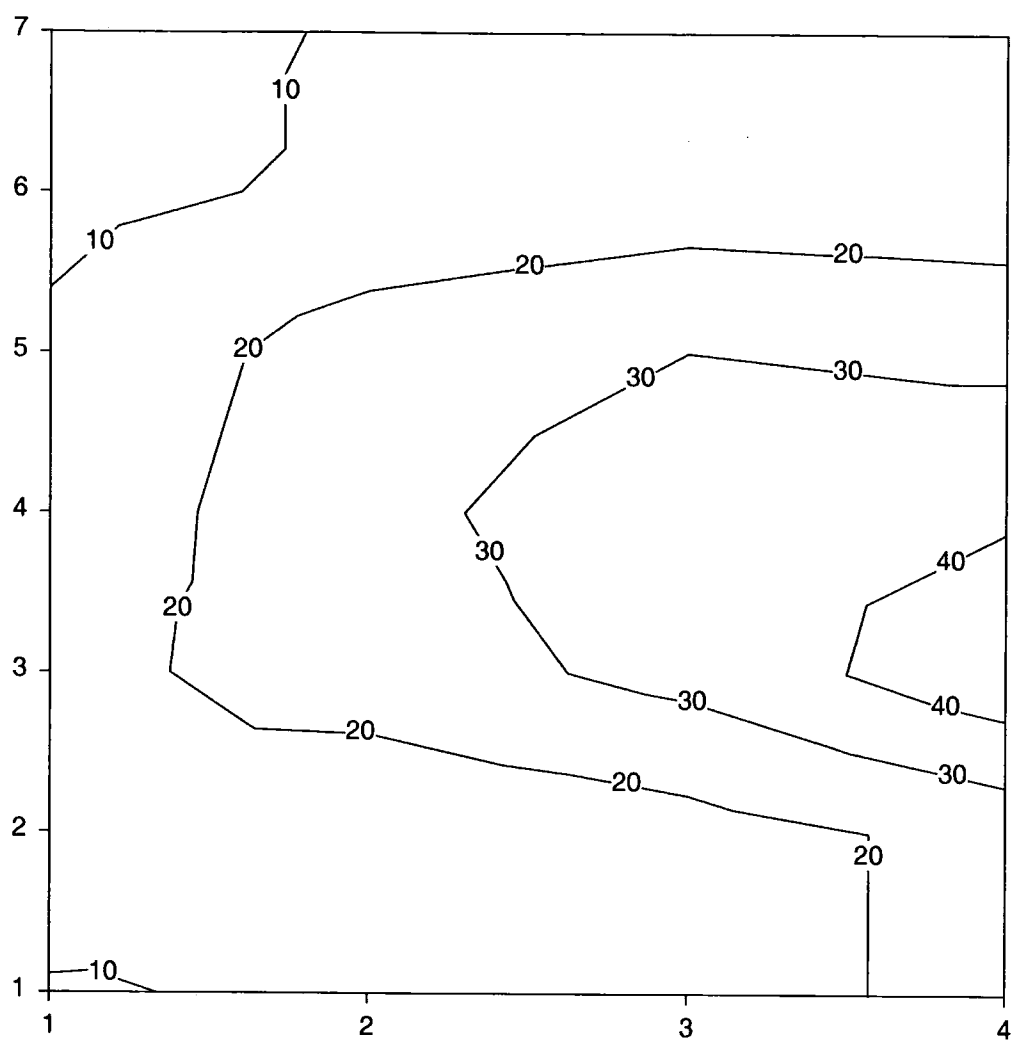


Fig.II.9.c. Interpolated contour plan of Tepeyani: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

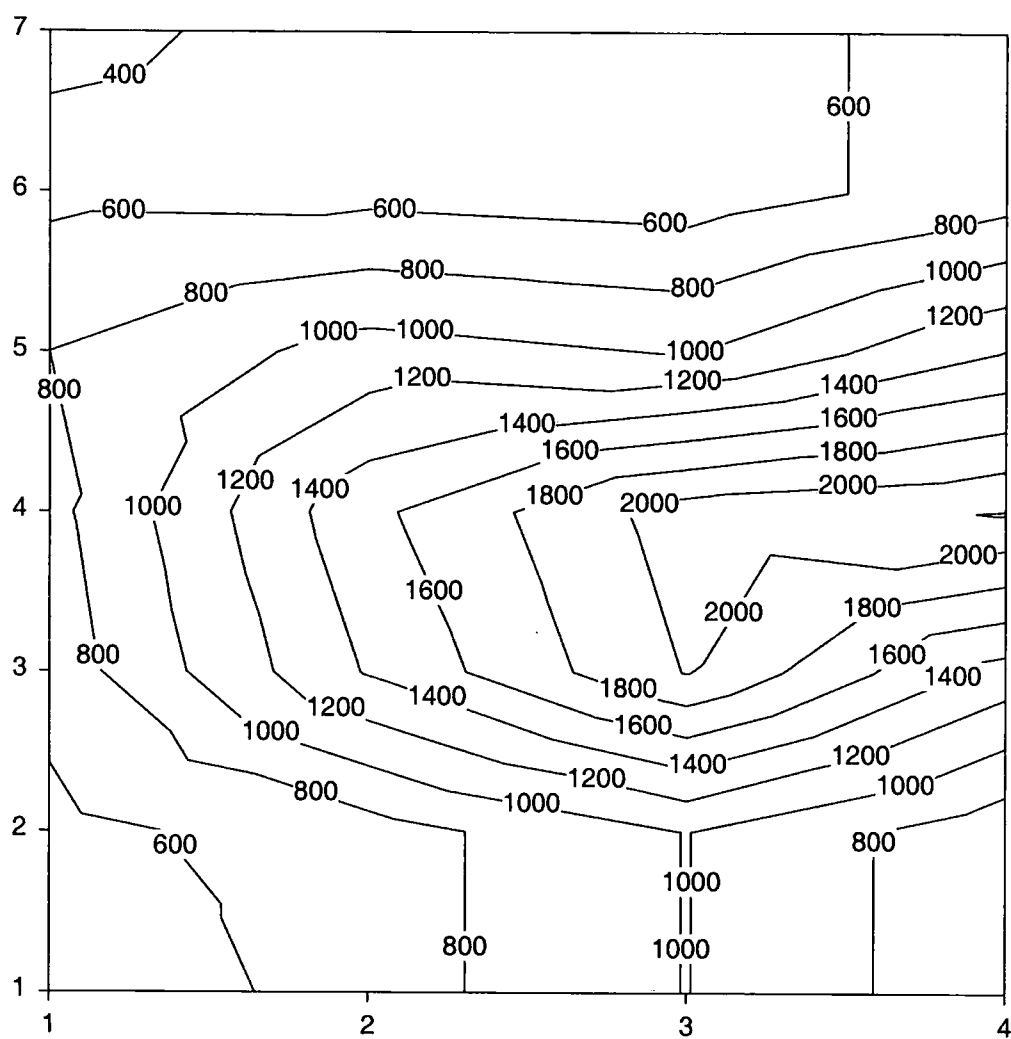


Fig.II.9.d. Interpolated contour plan of Tepeyani: Pottery weight.

pottery; in addition, flint implements, two figurines, three stone axes and small fragments of wall plasters were discovered. Most of the flint implements were found in the Eastern side of the sampled area in a similar concentration to that of the pottery. Although Tepeyani is a small site, artefact density is very high. A total of 1010 sherds and 56 chipped stone implements was collected.

The survey results show us a single concentration pattern of artefacts. A high density of artefacts was found near the main road, with fall off at regular intervals (Fig.II.9.b-c). The concentration of Pre-Cucuteni / Maritsa (= Kocatepe) settlement gives a density of 90 sherds per 100 square meter falling off at regular intervals to 20 sherds. The main concentration of Karanovo VI settlement gives a density of 40 sherds per 100 square meters, falling off at almost regular intervals to 10 sherds.

The pattern of sherd weights matches the pattern of sherd density (Fig.II.9.d). The main concentration of sherd weight gives a density of 2 kg per 100 square meters falling off at regular intervals to 0.4 kg.

Tepeyani shows a single-focus concentration pattern. The explanation of such a central concentration at Tepeyani can be explained in three different ways. First, Tepeyani is located on a first terrace of the Süloğlu Stream, as mentioned above. The first terrace of stream has a gentle slope on which the site formed. In Tepeyani, it seems that the artefacts are generally larger and heavier than the soil matrix. Sediments are being washed downslope by the rain and artefacts are left in position. This can result in a “concentration effect” on the surface density of material (Cherry et. al 1991:204).

Second, the perimeter of the settlement has been damaged by the main road. During the road construction, it is probable that artefacts were cleared to the side of the road, resulting in a secondary concentration near the road.

Third, as Chapman (2000b) argues, the residents who lived in a Balkan village put their discarded objects and food remains together with midden-like discard not always into “rubbish pits” but also outside areas between and beyond their houses. The discarded objects were ever-present, at least until they were trodden down into the ground surface. For a long period of time, residents were living in this discard surrounding their living area. According to Chapman, this principle reaches its apogee on settlements, where the basic principle is one of living where the ancestors had lived (Chapman 2000b). House units producing a high density of discard objects may result in a “concentration effect” on the surface density. On open sites, the land between houses was divided up between households, often as gardens. The house order and discard quantity on the settlement may be reflected on the surface as a large single concentration with fall-off regular intervals. When house units set close each other and producing a high density of discard, this may be reflected on the surface as a large single concentration.

Without excavation, it is difficult to decide for the best explanation of a single concentration pattern in Tepeyani.

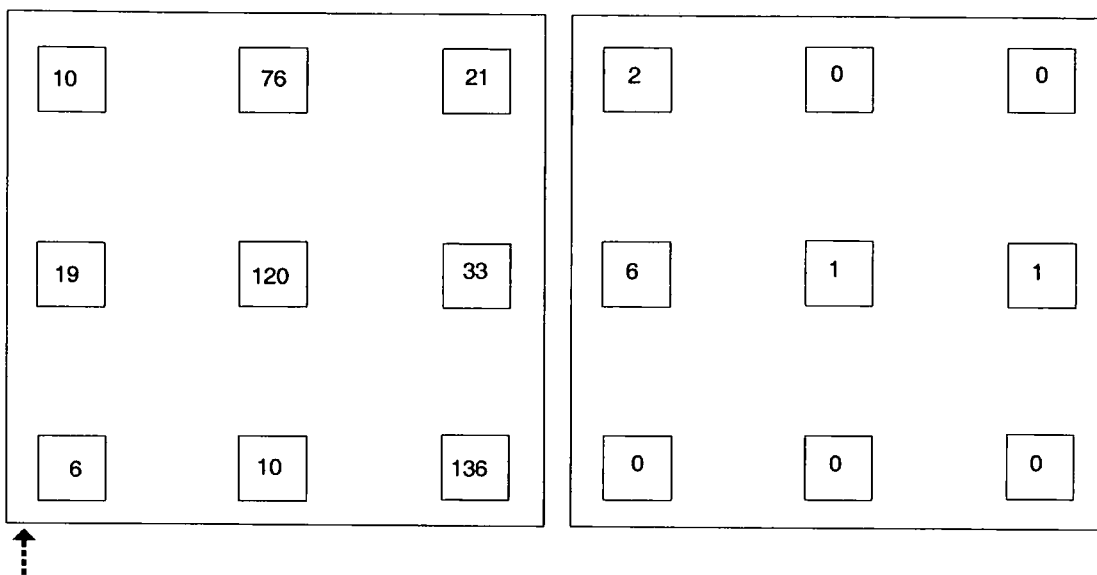
HAMAYLITARLA (BURUNEREN): Hamaylitarla was first discovered by M.A. Işin, director of Tekirdağ Museum at the beginning of 1990s and initially dated to the Early Bronze Age. In 1997, O. Özbek and the author visited the site and found stone axe rough-outs, flakes and hammer stones together with Early Neolithic pottery. Unsystematic field collection in the site shows that Hamaylitarla is an axe factory associated with prehistoric finds. The site of Hamaylitarla measures about 120 x 120 m, and the stone axe factory is spread over 250 square meters.

In 1999-2000, an area of 70 x 70 m was investigated using alternately spaced 9 10 x 10 m quadrats (Fig.II.10.a). The sunflowers were under cultivation and the visibility was "best". The majority of the pottery was dated to the Early Neolithic period. Early Bronze Age and Hellenistic-Roman potteries were also noted. The whole surface was covered by stone flakes and small blocks of metabasite rocks. A total of 321 Early Neolithic sherds, 62 Early Bronze Age sherds and 36 axe roughouts was collected. Only 10 chipped stone implements were found.

As a result of the 10 x 10 m grid survey, two distinct concentrations of Early Neolithic pottery were observed - one in the middle and the other located in the Southeast corner (Fig.II.10.b). The concentration in the Southeast corner gives a density of 120 sherds per 100 square meters falling to 80 sherds. This concentration area is also at the edge of the settlement, close to a spring; here we also noted very large pieces of metabasite blocks. The concentration in the middle gives a density of 100 sherds per 100 square meters falling to 80 sherds. Outside of the areas of concentrations, there is a density from 60 to 40 sherds per 100 square meters, falling to 20 sherds in the West.

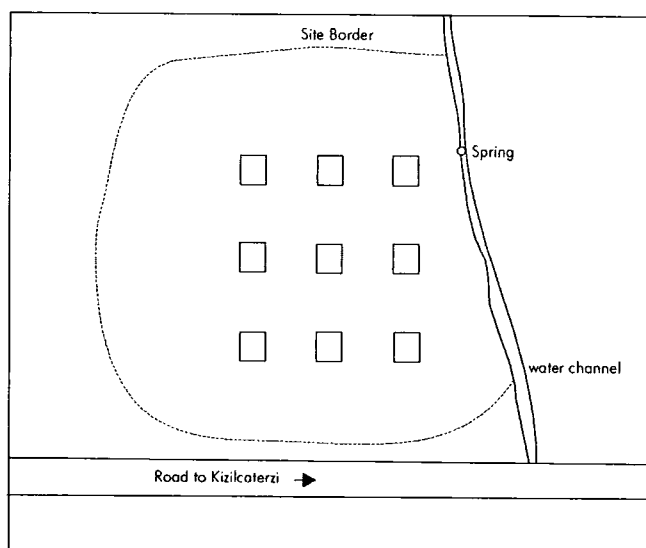
The pattern of sherd weights matches the pattern of sherd density (Fig.II.10.c). In the middle concentration, sherd weight gives a density of 1 kg per 100 square meters falling off at almost regular intervals to 0.2 kg. In the Southeast corner, a small concentration of sherd weight gives a density of 1.2 kg per 100 square meters falling to 0.8 kg.

The recorded artefact distribution in Hamaylitarla indicates a multiple-focus concentration pattern. The survey results show that Hamaylitarla may be a manufacturing site occupied by craft-specialists. The stone axe rough-outs, flakes, hammer stones and block of metabasite rocks are spread over a larger area than the pottery. Hamaylitarla is situated directly on the rock (metabasite) source. The craft-specialists were probably living in small huts and manufactured axes over a wide area. The site of Hoca Çeşme shows that the buildings of the Early Neolithic period were oval huts ca. 5 m in diameter (Özdoğan 1998b). Pottery concentrations in Hamaylitarla may indicate several small hut structures.



a

b



c

Fig.II.10.a. Hamaylitarla; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

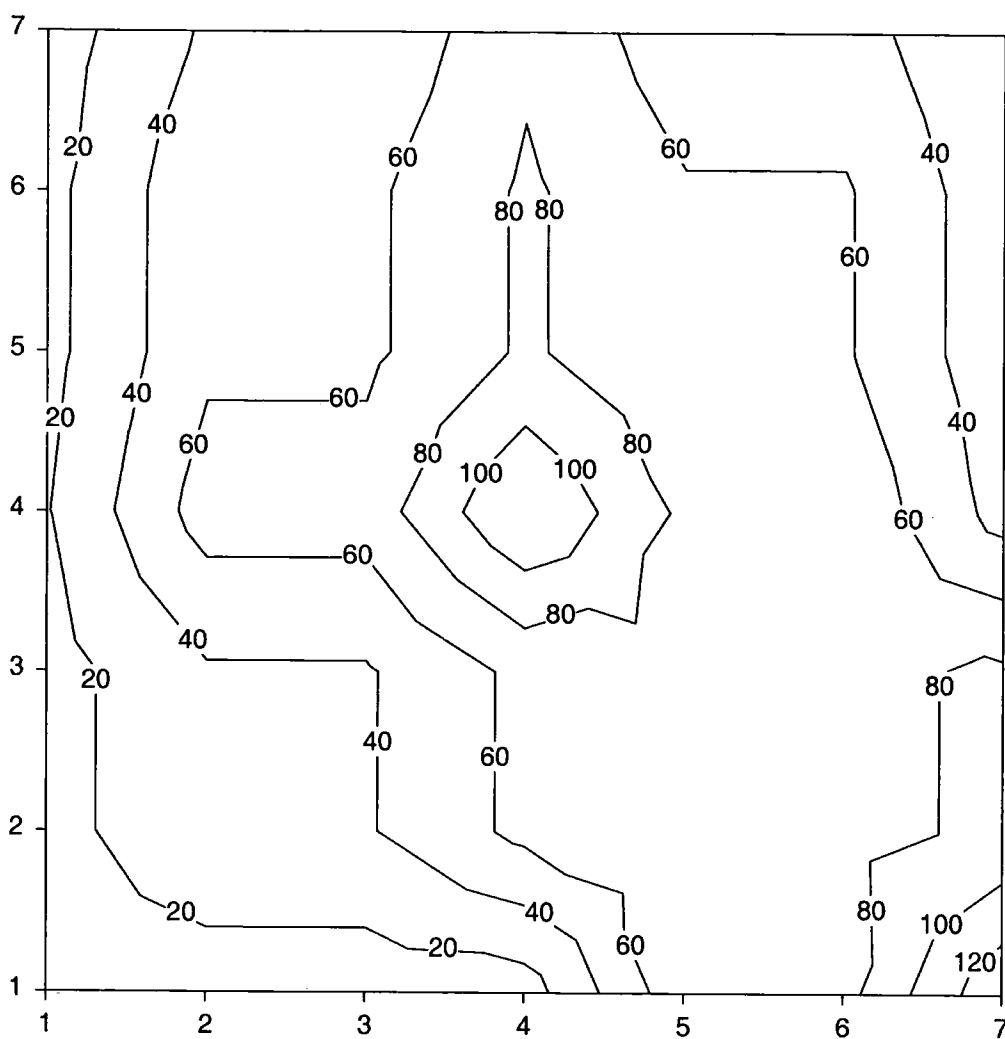


Fig.II.10.b. Interpolated contour plan of Hamaylitarla: Early Neolithic sherd distribution (density of sherds per 100 m²).

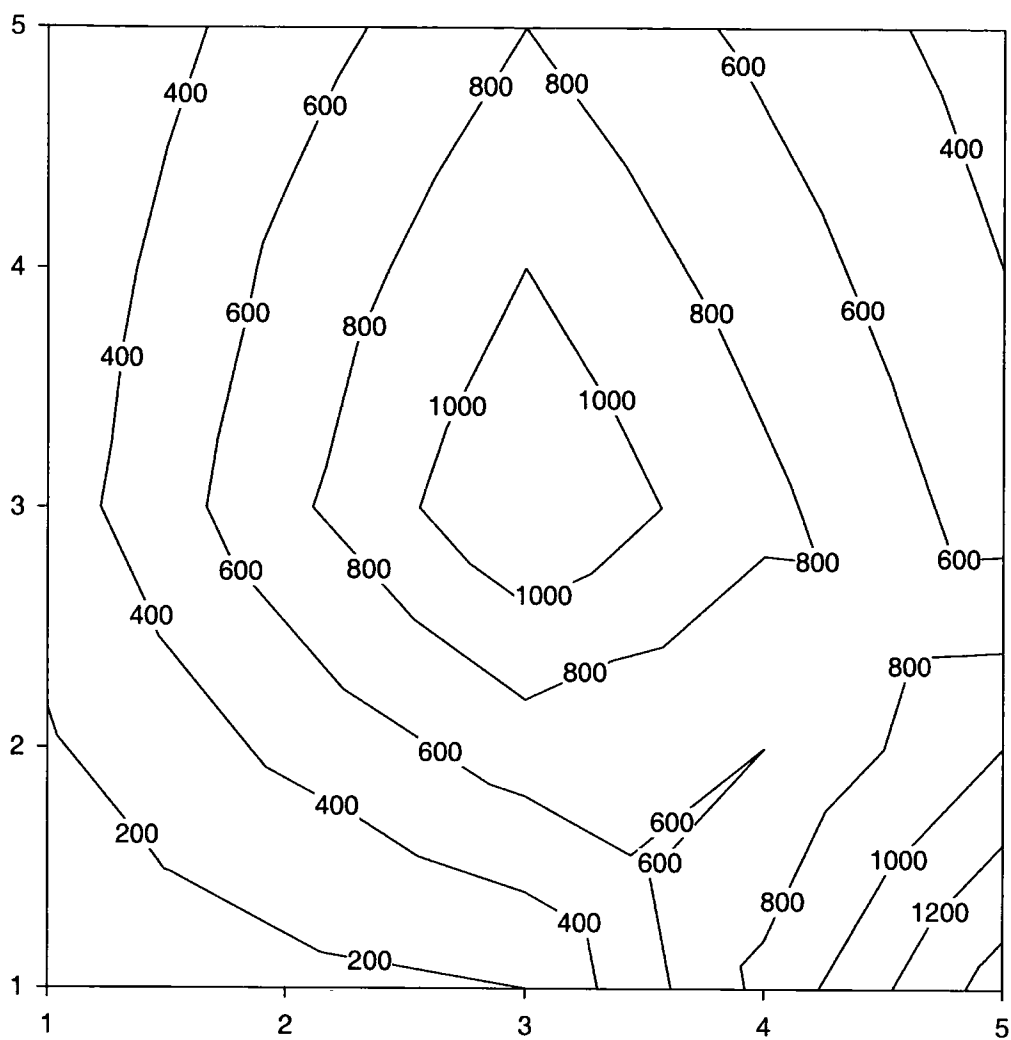


Fig.II.10.c. Interpolated contour plan of Hamaylitarla: Pottery weight.

YUMURTA TEPE: Yumurta Tepe was first discovered in 1992 and investigated during our extensive survey in 1995 (Erdoğu 1997:280). The site was visited between 1995 and 1998 in different seasons and artefacts were collected unsystematically in different field units. This indicated the overall extent of the site. Yumurta Tepe consists of two single period occupations, both in the Chalcolithic Period; Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI settlements side by side and both cover a combined area of ca. 200 x 180 m.

The Pre-Cucuteni / Maritsa (= Kocatepe) settlement of Yumurta Tepe lies just Southwest of Karanovo VI settlement. The field was cultivated by wheat, and surface visibility was very poor. Only an area of 40 x 40 m was investigated by a set of 4 10 x 10 m quadrats. Because of very poor visibility, the results were not satisfactory. A total of 19 sherds was collected. No flint implements or other finds were recognized.

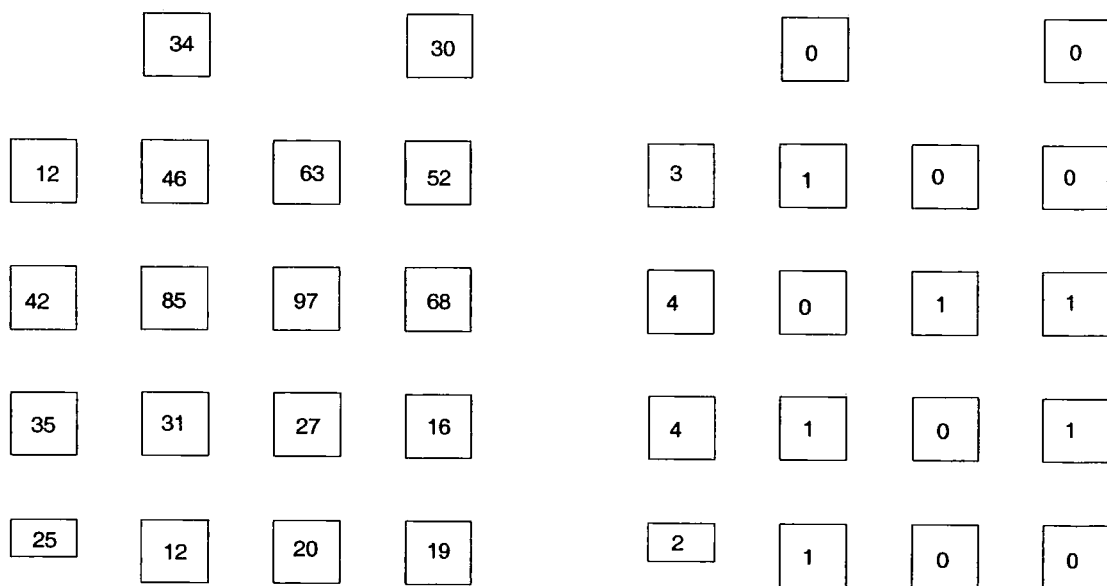
The Karanovo VI settlement of Yumurta Tepe covers an area of some 150 x 120 m. It was investigated over an area of 90 x 70 m by a set of 18 alternately spread 10 x 10 m quadrats in 1999-2000 (Fig.II.11.a). The field was cultivated by sunflowers and visibility was "best". All collected material was dated to the Chalcolithic (Karanovo VI) period. Only three sherds of Pre-Cucuteni / Maritsa (= Kocatepe) were found in these squares. The majority of the finds comprised pottery. Fragments of daub, flint implements, two grinding stones and two stone axes were also found. A total of 682 sherds and 19 chipped stone implements was collected.

The recorded artefact distribution shows a central concentration pattern of artefacts (Fig.II.11.b). The main concentration of artefacts lies in the centre, and gives a density of 90 sherds per 100 square meter falling off at regular intervals to 20 sherds.

The pattern of sherd weights matches the pattern of sherd density (Fig.II.11.c). The main concentration of sherd weight gives a density of 1 kg, falling off at regular intervals to 0.2 kg.

The Karanovo VI settlement of Yumurta Tepe shows a single-focus concentration pattern. The explanation of such a single concentration at Yumurta Tepe can be explained by prehistoric activities and / or environmental factors. The residents who lived in a Balkan village keep their discard near the household (Chapman 2000b). As mentioned above, they were living where their objects had previously been discarded. As the basis of house order and the quantity of settlement discard, this pattern can be reflected on the surface as a single concentration of artefacts with fall-off at regular intervals.

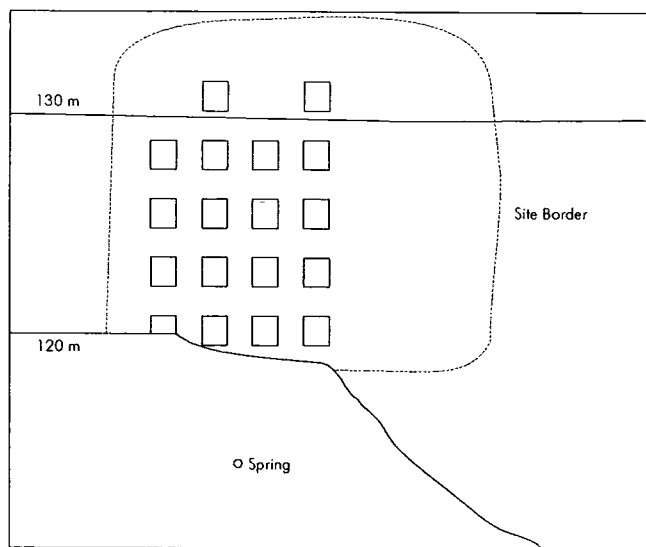
Yumurta Tepe is located on a high terrace of the Süloğlu Stream. The high terrace of stream has a gentle slope on which the site formed. Yumurta Tepe had suffered severe erosion and was represented by scrappy and worn sherds. However, larger and heavier



←----

a

b



c

Fig.II.11.a. Yumurta Tepe; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

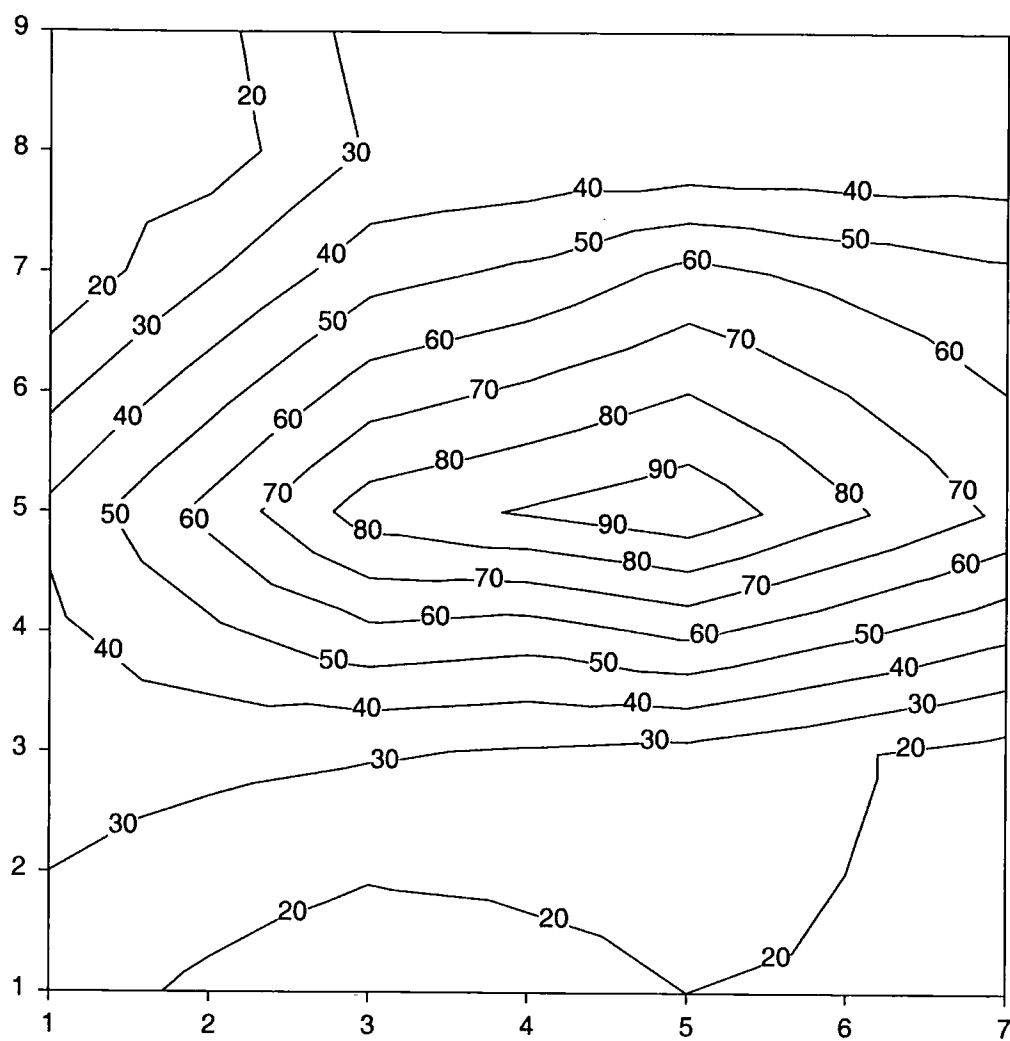


Fig.II.11.b. Interpolated contour plan of Yumurta Tepe: Chalcolithic (Karanovo VI) sherd distribution (density of sherds per 100 m²).

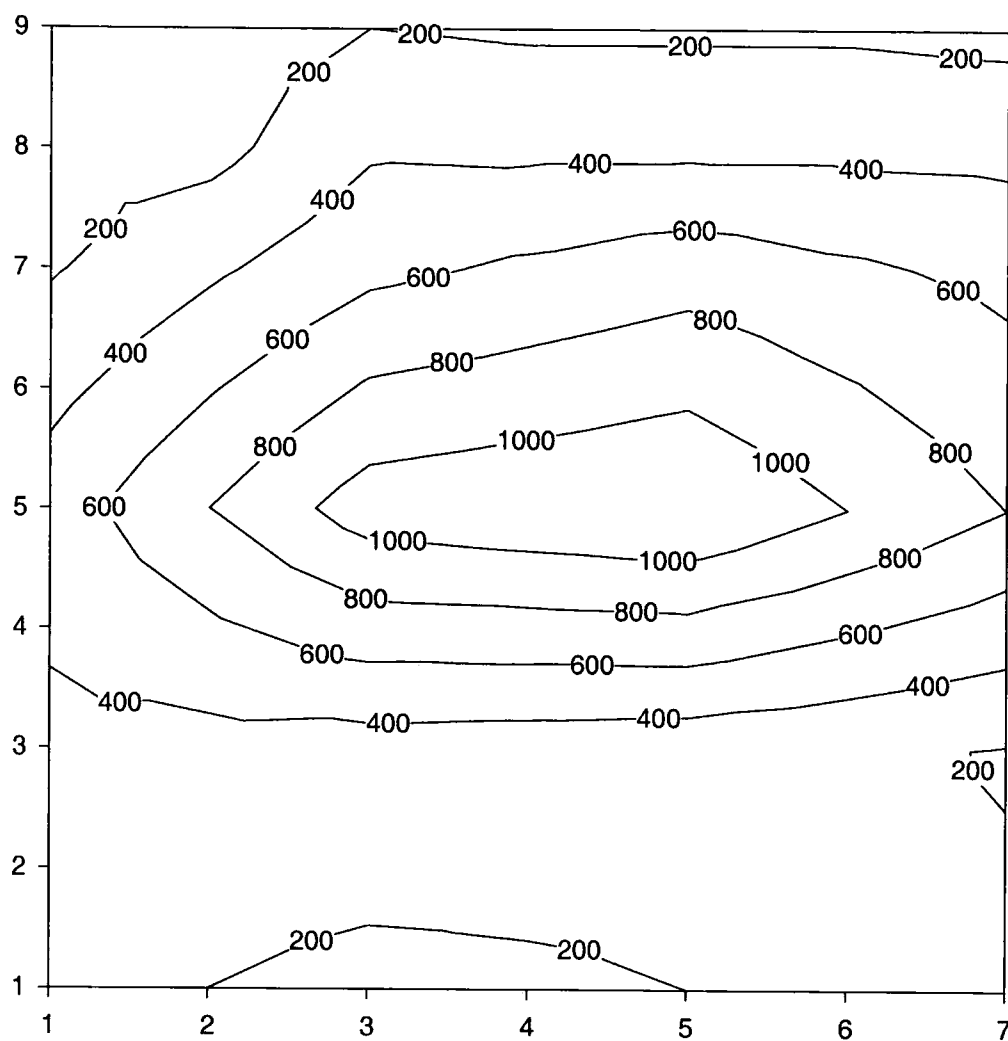


Fig. II.11.c. Interpolated contour plan of Yumurta Tepe: Pottery weight.

artefacts in the middle may be left in position. This can result in a central concentration of artefacts.

The site concentration principle is probably the better explanation than environmental for a single focus of concentration pattern in Yumurta Tepe.

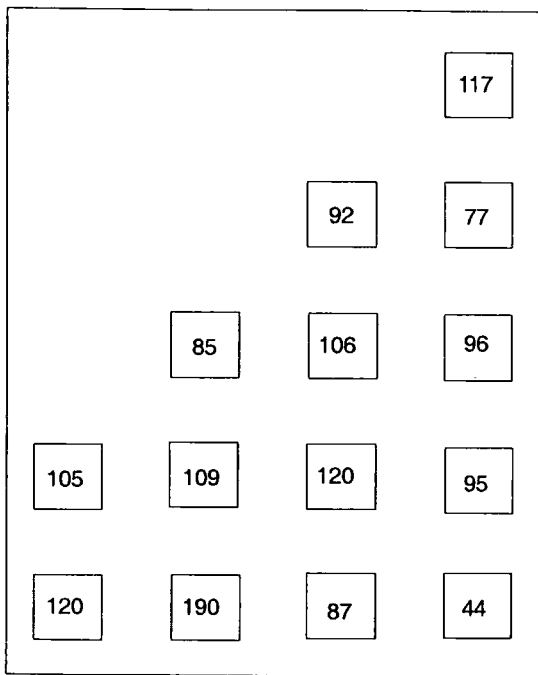
KAVAKLI 2: Kavakli 2 was first discovered in 1997 during our extensive survey in the area (Erdoğu 1999a: 349). Chalcolithic, Pre-Cucuteni / Maritsa (= Kocatepe) material was collected unsystematically in foci of high concentrations.

In 2000, Kavakli 2 was examined intensively, using alternately - spaced 10 x 10 m grids. Each field unit in the Kavakli area was investigated using systematic field walking techniques as mentioned above. This procedure indicated the spatial shape and extent of the site. The Northern perimeter of settlement was probably destroyed by the modern village. Artefacts were observed right up to the edge of the village. Kavakli 2 measures approximately 250 x 250 m. The core of the site is about 150 x 100 m. Fields were cultivated by sunflowers and wheat and some fields were ploughed. The core of the site is divided into three-field unit. The visibility was "best" in only one field unit in the core and it was sampled with alternately spaced 14 10 x 10 m quadrats (Fig.II.12.a). All prehistoric material was dated to the Chalcolithic, Pre-Cucuteni / Maritsa (= Kocatepe), period of the Balkans. There were also a small number of Roman sherds. A total of 1443 sherds and 90 chipped stone implements was collected.

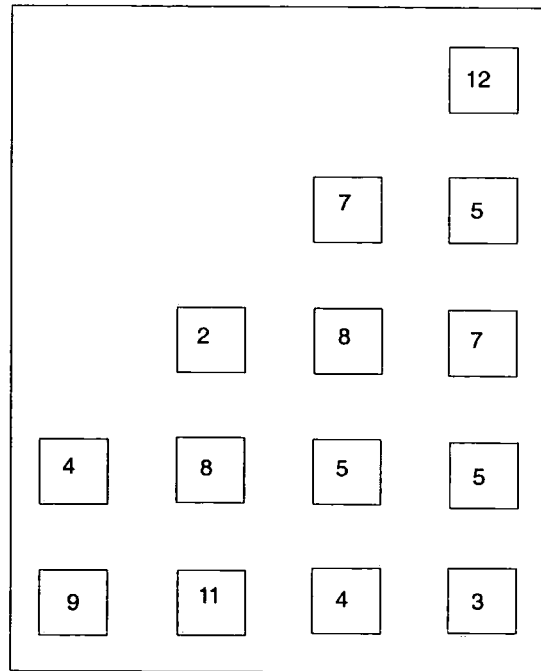
In Kavakli 2, there is one small concentration in the South-Western part of the sampled area (Fig.II.12.b). It gives a density of 180 sherds per 100 square meters, falling to 120 sherds. Fragments of daub, a grinding stone, a stone axe and animal bones were also found in this concentration. On the other hand, most of the sampled area has a density of 100 sherds per 100 square meters. In Kavakli 2, the Northern part of the core was not sampled; it is possible that more small concentrations exist.

The distribution pattern of Kavakli 2 sherd weights matches the pattern of sherd density (Fig.II.12.c). The South-Western concentration gives a density of 3 kg per 100 square meters, falling to 1.5 kg. Most of the sampled area gives a density average of 1.5 kg per 100 square meters, falling to 1 kg to the East.

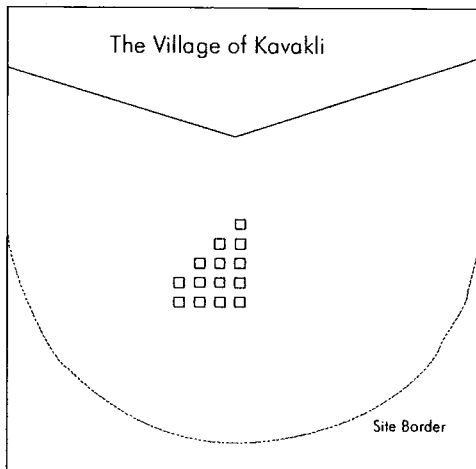
The prehistoric finds from Kavakli 2 are homogeneous, suggesting a single phase of habitation. There was only one small concentration recorded in Kavakli 2. However, I assume that some small concentrations exist in the North. Southern concentration artefacts in Kavakli 2 may be explained by the "site concentration" principle, as mentioned above. Artefact concentrations (sherds, bones, flints, an axe, a grinding stone and daub) in the South indicate the likelihood of a house-unit.



a



b



c

Fig.II.12.a. Kavakli 2; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

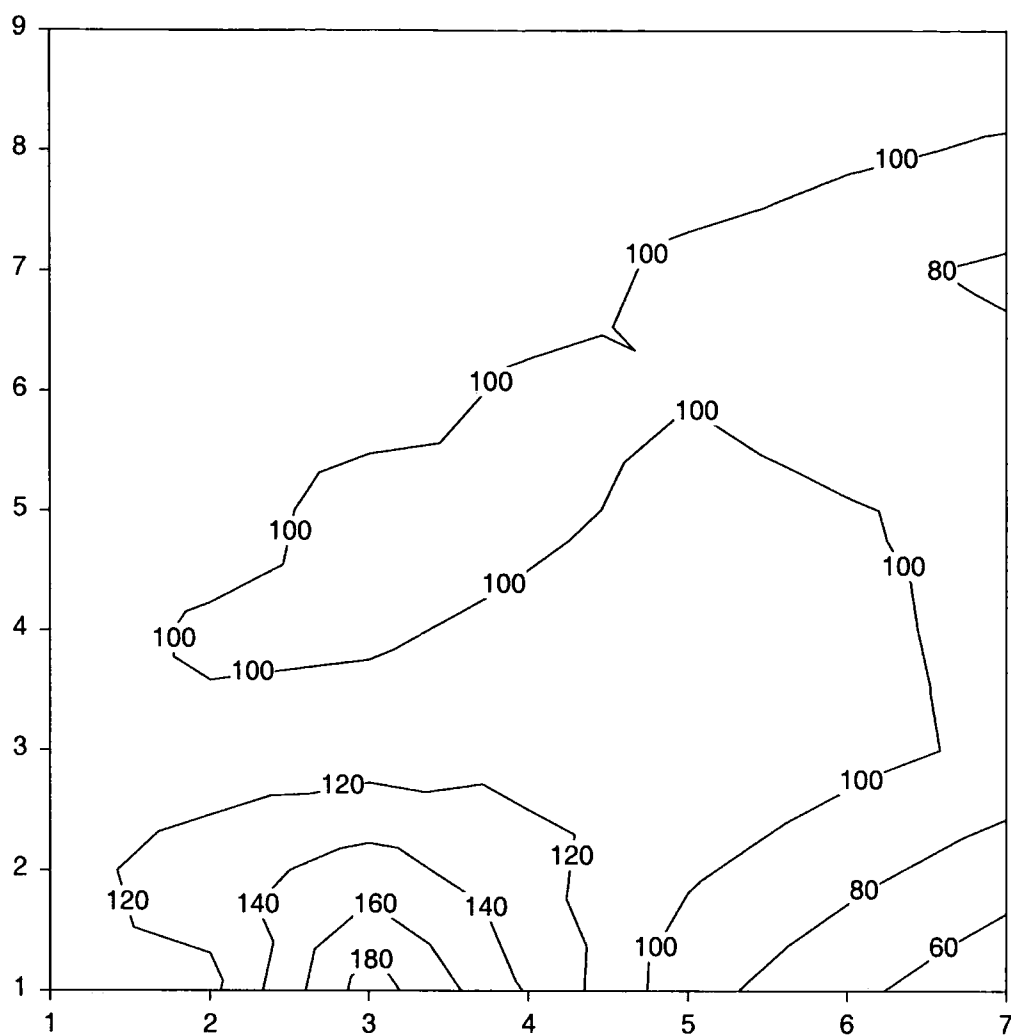


Fig.II.12.b. Interpolated contour plan of Kavakli 2: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).

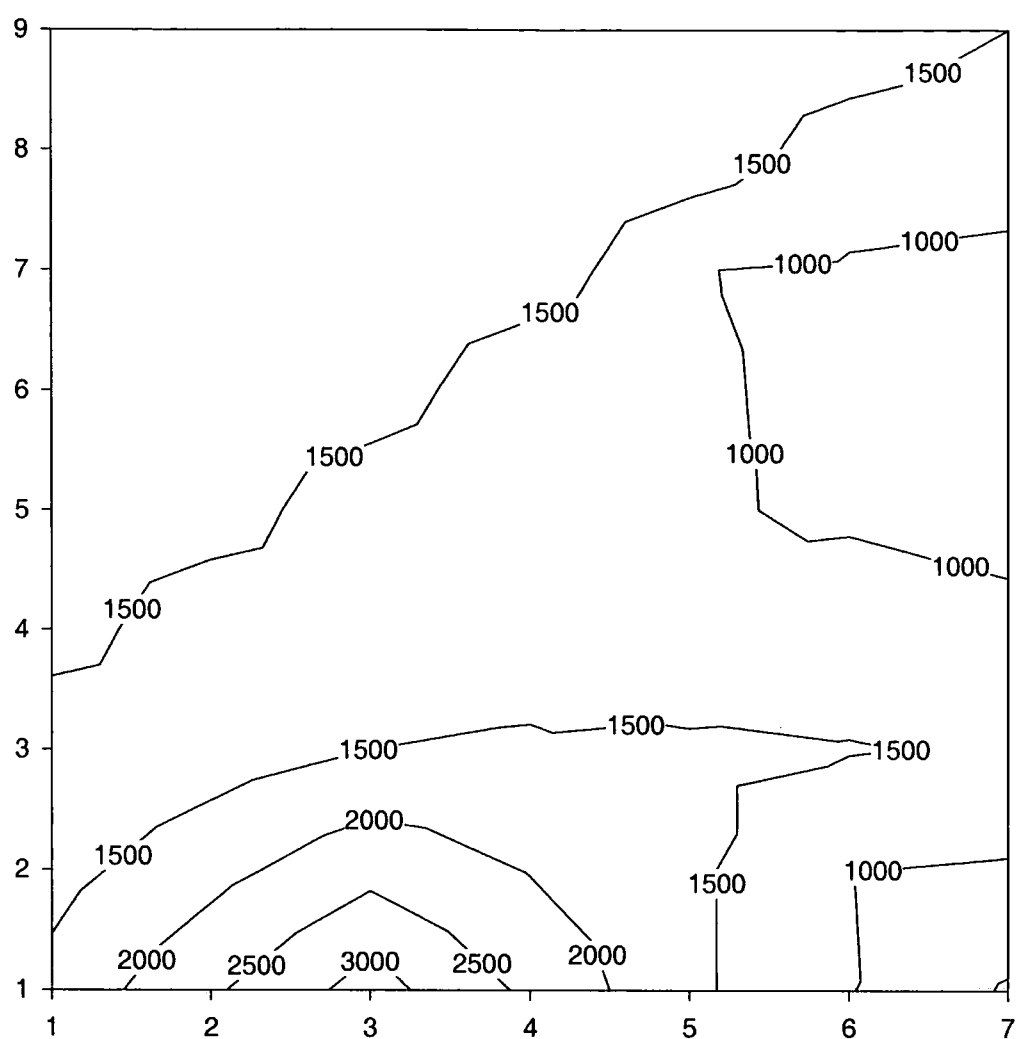


Fig.II.12.c. Interpolated contour plan of Kavakli 2: Pottery weight.

YAĞCILI / KAYNAKLAR: Yağcili was first discovered in 1995 during our extensive survey in the area along the Southern fringes of the Istranca Mountain (Erdoğan 1997: 277). The extensive survey was mainly carried out by unsystematic field walking based on information from the villagers. The finds were collected unsystematically only in good visibility field units. In 1995, Karanovo III-IV and Kalojanovec sherds were found.

In 2000, Yağcili was investigated intensively, using alternately - spaced 10 x 10 m grids. Yağcili spreads over six different field units, which were cultivated with sunflowers and wheat. The visibility was "best" in only three field units. These three field units were investigated over an area of 130 x 70 m by 15 10 x 10 m quadrats (Fig.II.13.a-b). The shape and extent of the site was estimated as best as possible given the limits of visibility. The site is ca. 250 x 250 m in size. All of the prehistoric material was dated to the Late Neolithic (Karanovo III-IV and Kalojanovec) period of the Balkans. When we compare other sites, the highest number of finds is come from Yağcili. A total of 3139 sherds and 574 stone implements was collected. Also seven stone axes and five figurines were discovered. A large amount of daub was also noted (Fig.II.13.b).

The survey results show us a single concentration pattern of artefacts (Fig.II.13.c). The main concentration of artefacts was found in the West, almost the centre of the settlement. It gives a density of 450 sherds per 100 square meters, falling off at regular intervals to 100 sherds to the East.

The pattern of sherd weights matches the pattern of sherd density (Fig.II.13.d). The main concentration of sherd weight gives a density of 9 kg, falling off at almost regular intervals to 2 kg.

Yağcili shows a single-focus concentration pattern. The explanation of such a central concentration at Yağcili can be explained two different ways. First, Yağcili is situated on a slope of Yağcili stream. There are large quantities of artefacts in Yağcili and their weights are also high. In Yağcili, it seems that the artefacts are probably heavier than the soil matrix. Sediments are being washed downslope by the rain and artefacts are left in position. This can result in a "Concentration effect" on the surface density of the material (Cherry et al 1991:204). The second explanation is the "site concentration" principle, as mentioned above.

The house-units with a high density of discard objects - the site concentration principle - may better explain the single-focus concentration pattern of Yağcili.

ARPAÇ / KAYNAKLAR: The site was first discovered in 1995, during our extensive survey in the Süloğlu Basin (Erdoğan 1997: 279). The Süloğlu Basin was surveyed by unsystematic field walking only on stream terraces and around the natural water sources. Arpaç is situated near spring water. In the 1995 survey, Chalcolithic; (Pre-Cucuteni /

| | | | | |
|----|-----|-----|-----|-----|
| 56 | 115 | 138 | 180 | 230 |
| 52 | 178 | 130 | 300 | 490 |
| 63 | 201 | 298 | 330 | 380 |

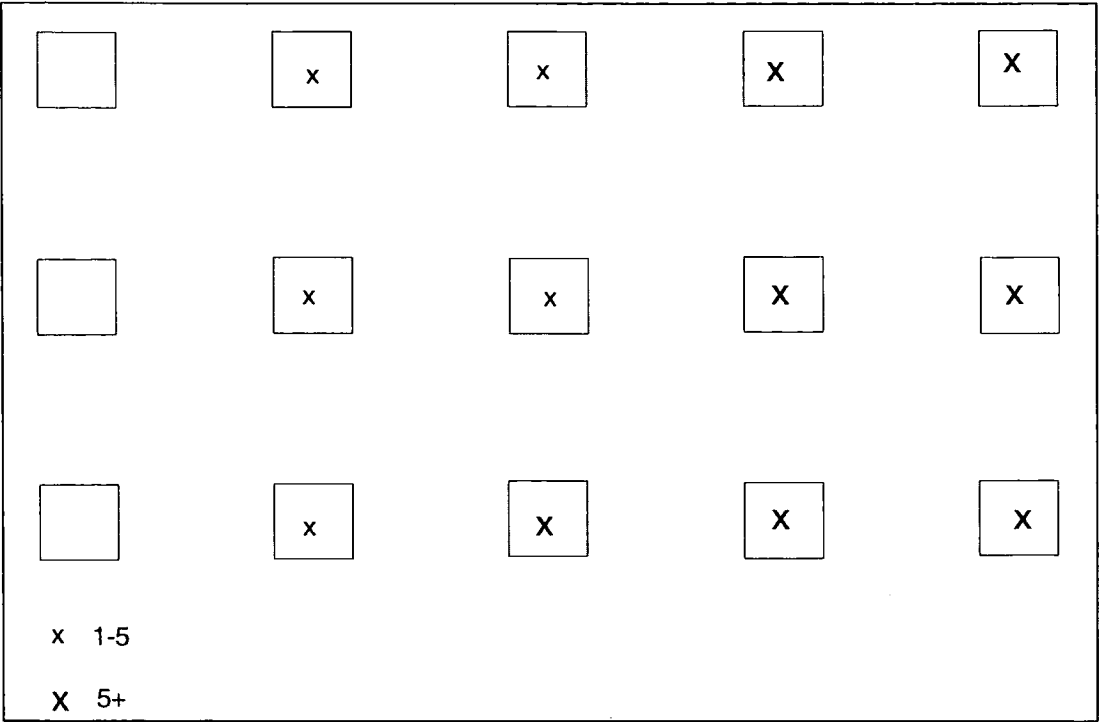
a

| | | | | |
|----|----|----|----|----|
| 14 | 58 | 35 | 44 | 48 |
| 10 | 31 | 45 | 38 | 50 |
| 18 | 44 | 46 | 42 | 46 |

b



Fig.II.13.a. Yağcili; (a) absolute sherd counts. (b) chipped stone counts.



c
←---

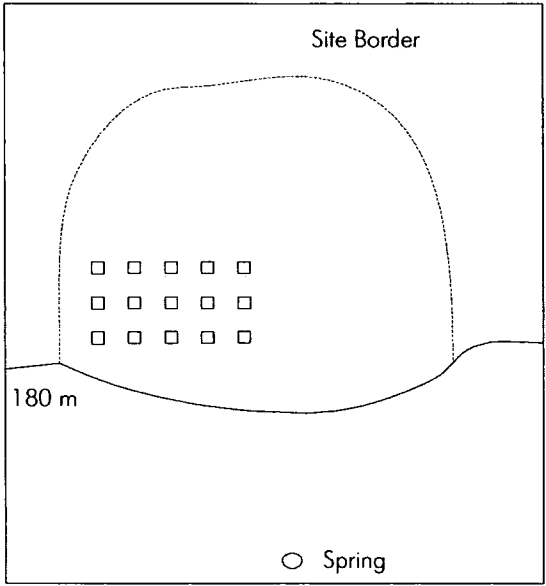


Fig.II.13.b. Yağcili; (c) daub fragments count. (d) sketch plan of sampled area.

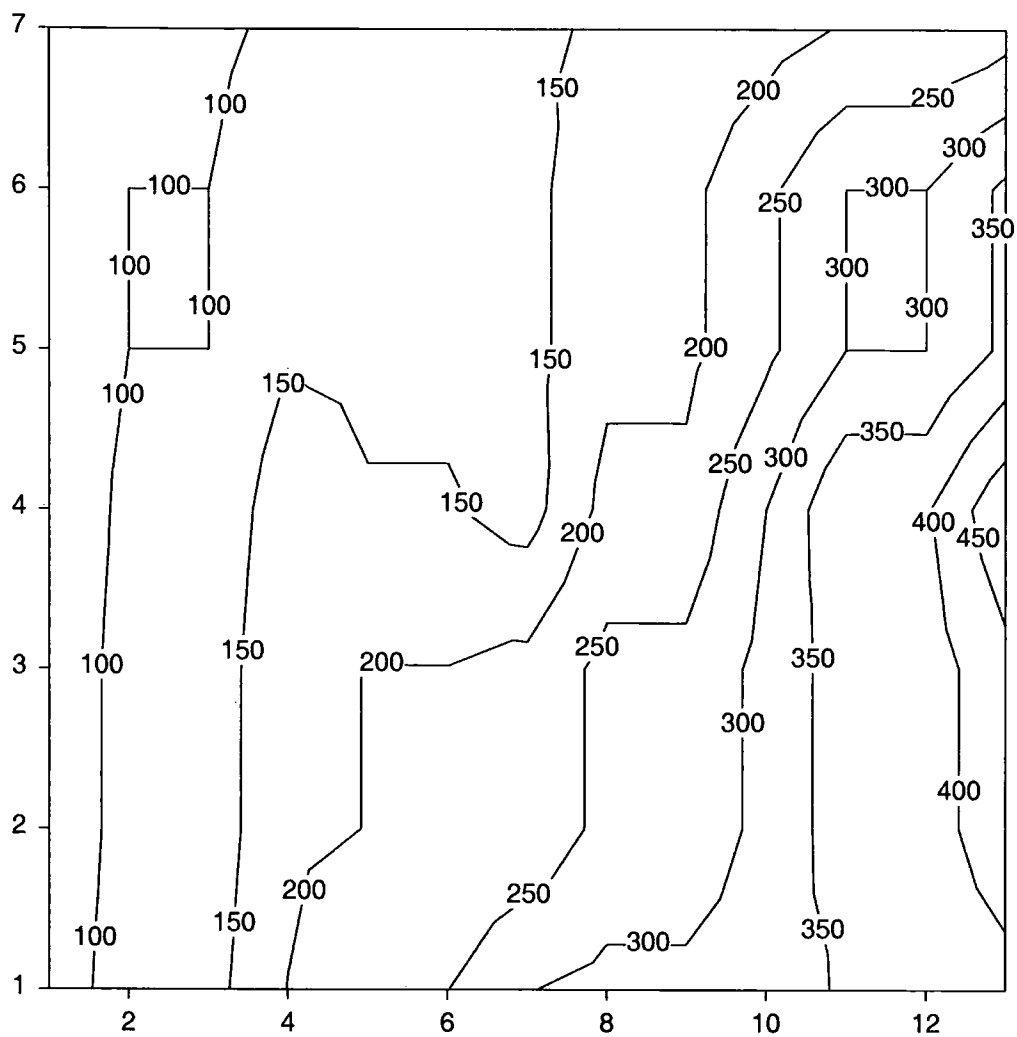


Fig.II.13.c. Interpolated contour plan of Yağcili: Late Neolithic (Karanovo III-IV) sherd distribution (density of sherds per 100 m²).

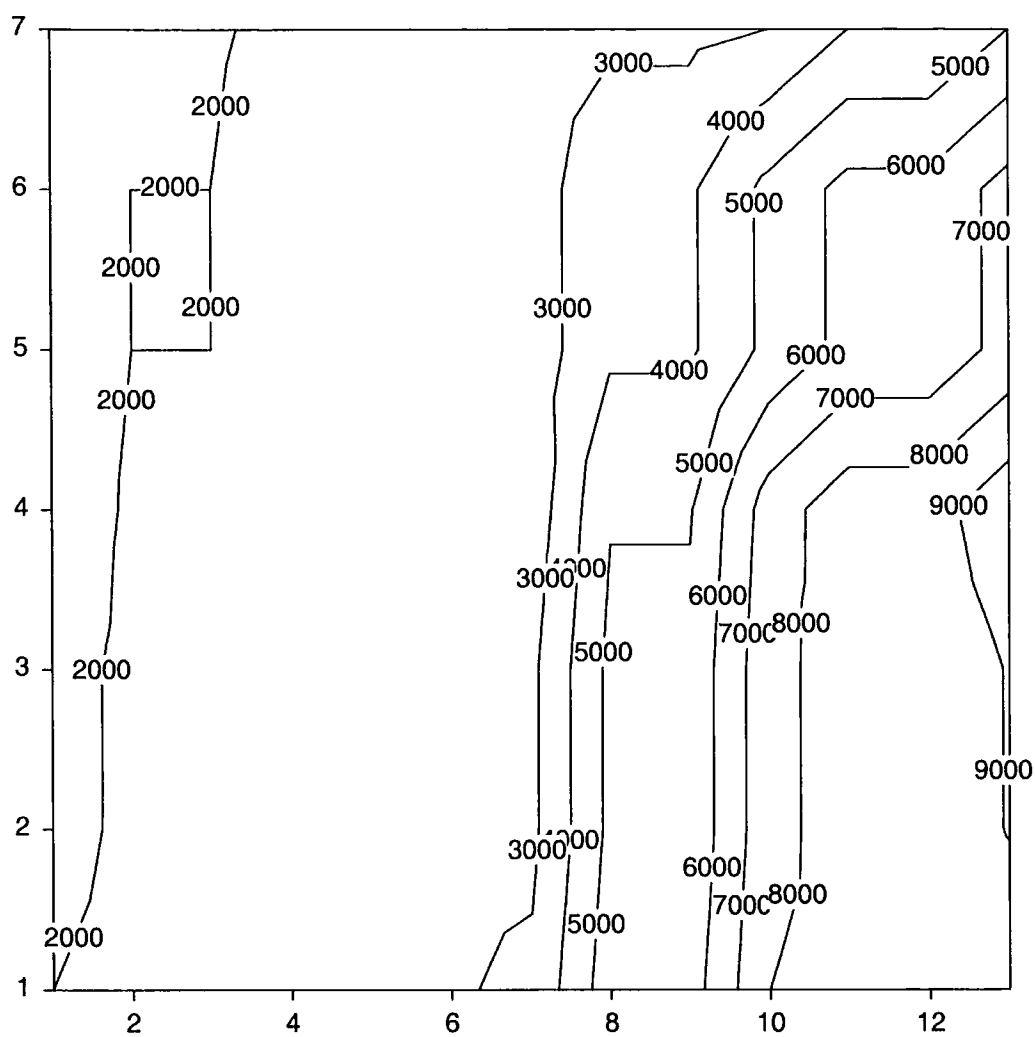
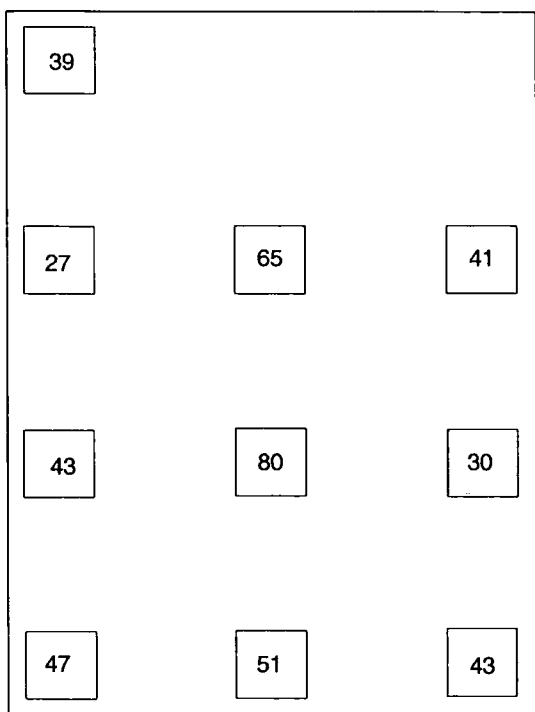
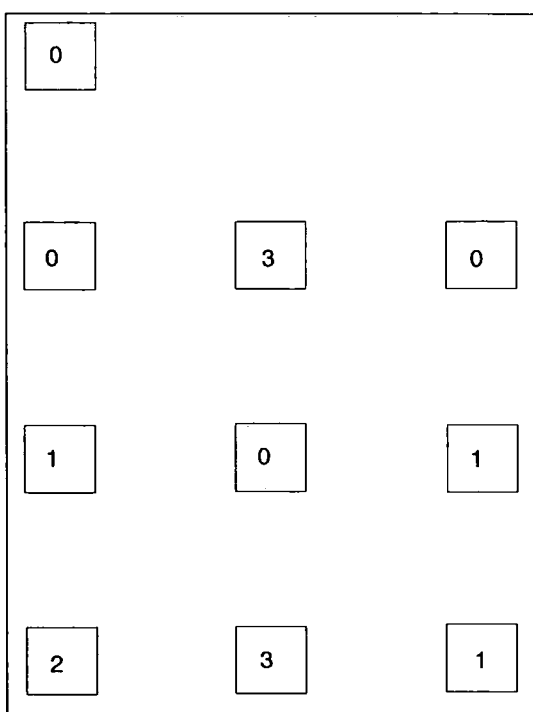


Fig.II.13.d. Interpolated contour plan of Yağcili: Pottery weight.

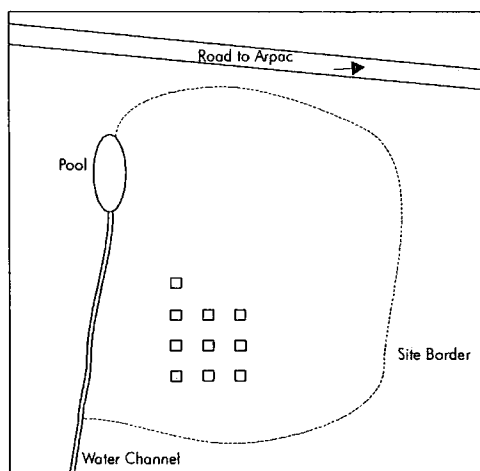


---->

a



b



c

Fig.II.14.a. Arpaç / Kaynaklar; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

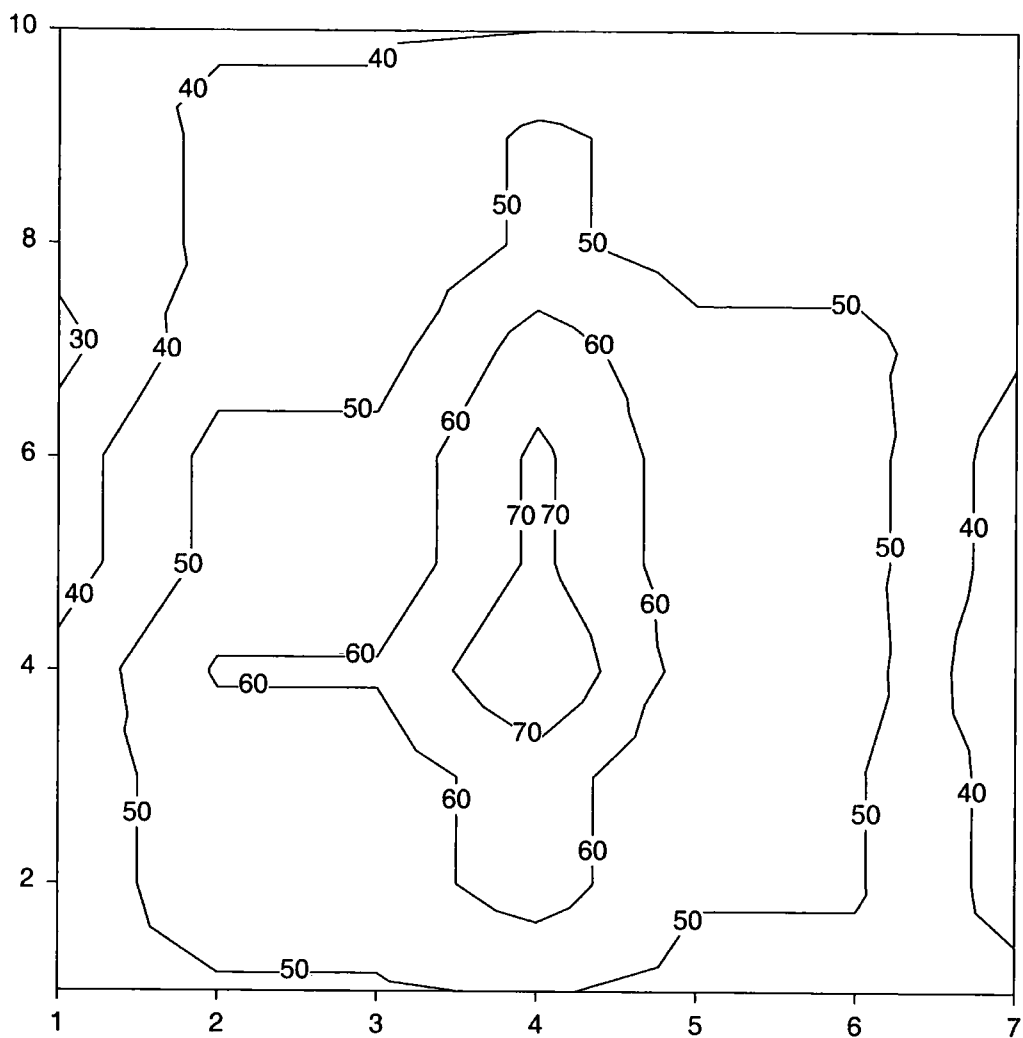


Fig.II.14.b. Interpolated contour plan of Arpaç / Kaynaklar: Chalcolithic (Kocatepe) sherd distribution (density of sherds per 100 m²).

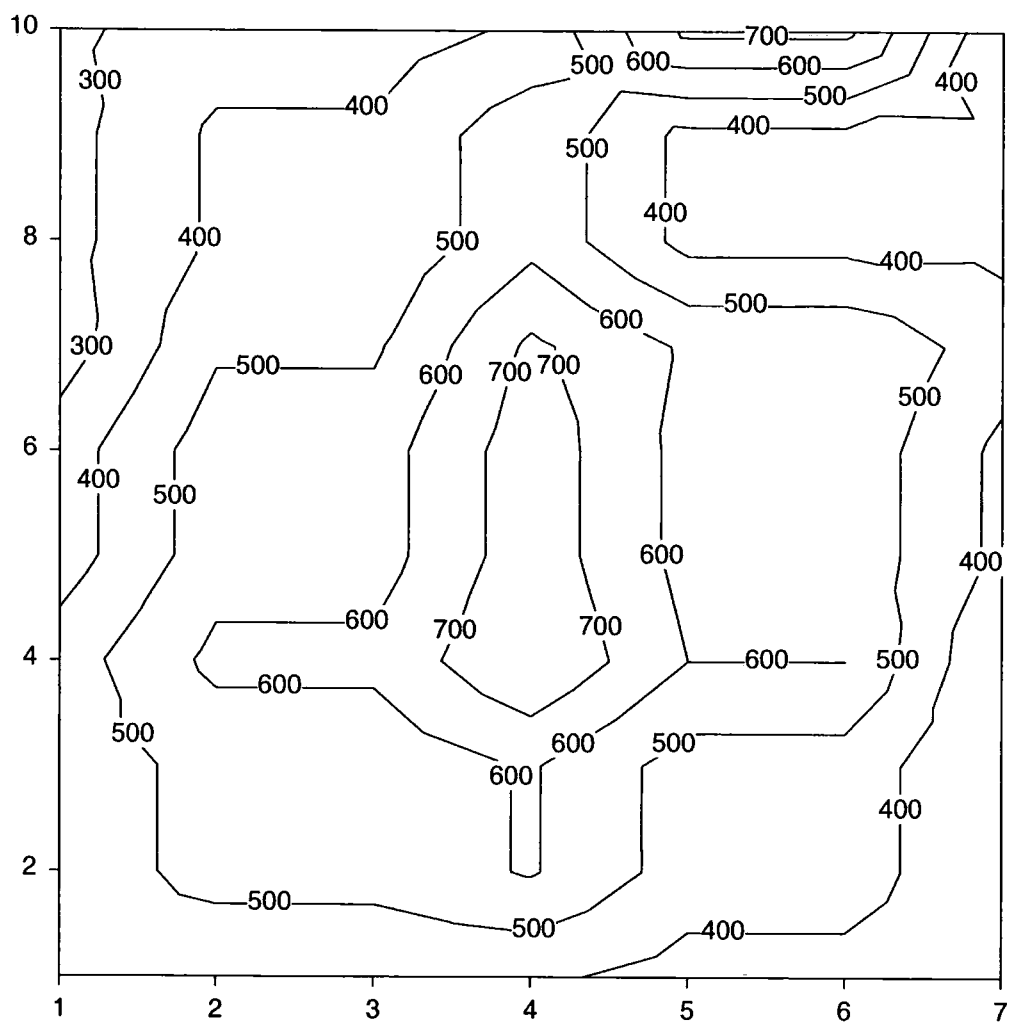


Fig.II.14.c. Interpolated contour plan of Arpaç / Kaynaklar: Pottery weight.

Maritsa (= Kocatepe), Early Bronze Age, Late Bronze / Early Iron Age and Roman pottery were found.

In 2000, Arpaç was examined intensively, using alternately - spaced 10 x 10 m grids. Arpaç is a completely flat site and artefacts were found over an area of ca. 280 / 300 x 160 / 180 m. The site spreads over 7-8 field unit and they were cultivated by sunflowers, wheat and corn. During the extensive survey in 1995, it became clear that the artefacts were concentrated to the Northeast of the spring. This area was sampled by alternately placed 13 10 x 10 m quadrats (Fig.II.14.a). The visibility was "better than average". A total area of 100 x 70 m area was investigated, Pre-Cucuteni / Maritsa (= Kocatepe) material were found together with the Late Bronze / Early Iron Age and Roman pottery. Although a handful of Early Bronze Age sherds were present in the earlier survey, it was absent in 2000. A total of 569 prehistoric sherds and 12 chipped stone implements was collected. Very small fragments of daub and a broken axe were also discovered.

In Arpaç, the recorded artefact distribution indicates a central concentration pattern (Fig.II.14.b). The main concentration of artefacts in the centre gives a density of 70 sherds per 100 square meters, falling off at almost regular intervals to 30 sherds.

The distribution of pottery by weight in Arpaç shows two concentrations (Fig.14.c). The main concentration of sherd weight was found in the centre, in a similar concentration to that of the sherd density. It gives a density of 0.7 kg per 100 square meters, falling off at regular intervals to 0.3 kg. In the Northwest, there is another small weight concentration, which gives a density of 0.7 kg per 100 square meters, falling to 0.6 kg.

Arpaç shows a single-focus concentration pattern. Without any excavations, the explanation of such a single concentration at Arpaç is very difficult. When we look at its topography, there is no slope. It is a completely flat site. The only explanation is the "site discard concentration" principle as discussed above.

KÖPRÜBAŞI: The site was first discovered in 1986 during the prehistoric surveys of Istanbul University (Özdoğan 1988: 159). The details of this survey have not yet published. During our surveys in 1995, the site was re-visited and Karanovo III sherds together with Late Bronze / Early Iron Age and Roman pottery were collected (Erdoğu 1999a: 276).

In 1999, Köprübaşı was examined intensively, using alternately - spaced 10 x 10 m grids. This procedure gave us a better understanding not only of its shape and extent but also its date. As a result of the 10 x 10 m grid survey, it became clear that Köprübaşı consists of two periods of settlements - Karanovo III and Çardakaltı / Kalojanovec, almost side by side and together covering an area of ca. 250 x 250 m. Köprübaşı was investigated over an area of 130 x 130 m by a set of alternately - spread 15 10 x 10 m quadrats (Fig.II.15.a-b). Two different field units were sampled and one was cultivated by

| | | | | |
|---|---|----|----|---|
| 0 | 5 | 37 | 10 | 5 |
|---|---|----|----|---|

| | | | | |
|---|---|----|----|----|
| 0 | 1 | 27 | 20 | 25 |
|---|---|----|----|----|

| | | | | |
|---|---|----|----|----|
| 0 | 4 | 78 | 27 | 17 |
|---|---|----|----|----|

a

| | | | | |
|----|----|---|---|---|
| 39 | 48 | 4 | 1 | 0 |
|----|----|---|---|---|

| | | | | |
|----|----|----|---|---|
| 40 | 29 | 10 | 4 | 0 |
|----|----|----|---|---|

| | | | | |
|----|----|---|---|---|
| 98 | 78 | 9 | 5 | 0 |
|----|----|---|---|---|

---->

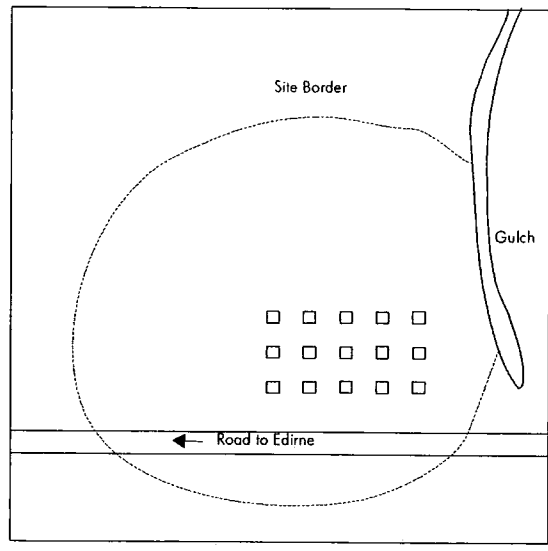
b

Fig.II.15.a. Köprübaşı; (a) absolute Karanovo III sherd counts, (b) absolute Çardakalti sherd counts.

| | | | | |
|----|----|----|----|---|
| 2 | 24 | 16 | 13 | 9 |
| 10 | 11 | 9 | 4 | 4 |
| 7 | 8 | 9 | 5 | 0 |



c



d

Fig.II.15.b. Köprübaşı; (c) absolute chipped stone counts, (d) sketch plan of sampled area.

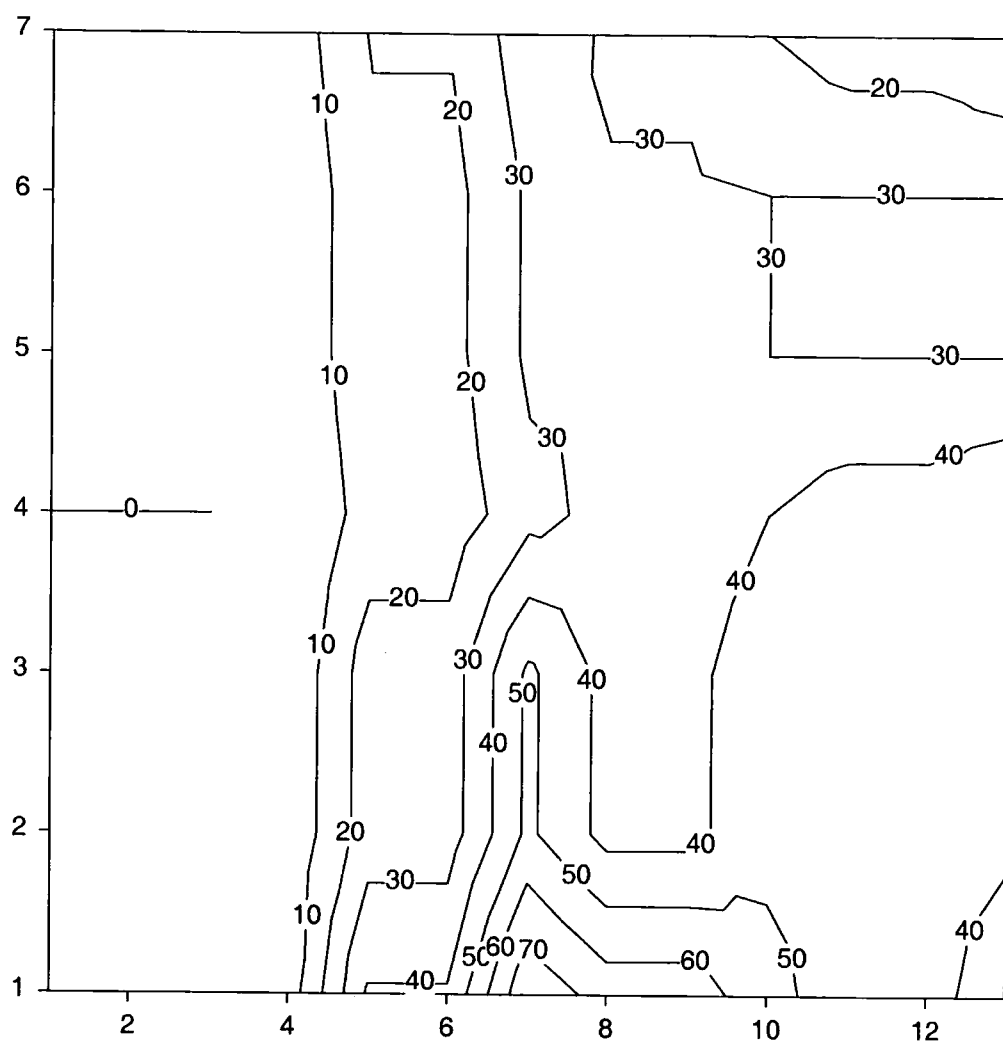


Fig.II.15.c. Interpolated contour plan of Köprübaşı: Middle Neolithic (Karanovo III) sherd distribution (density of sherds per 100 m²).

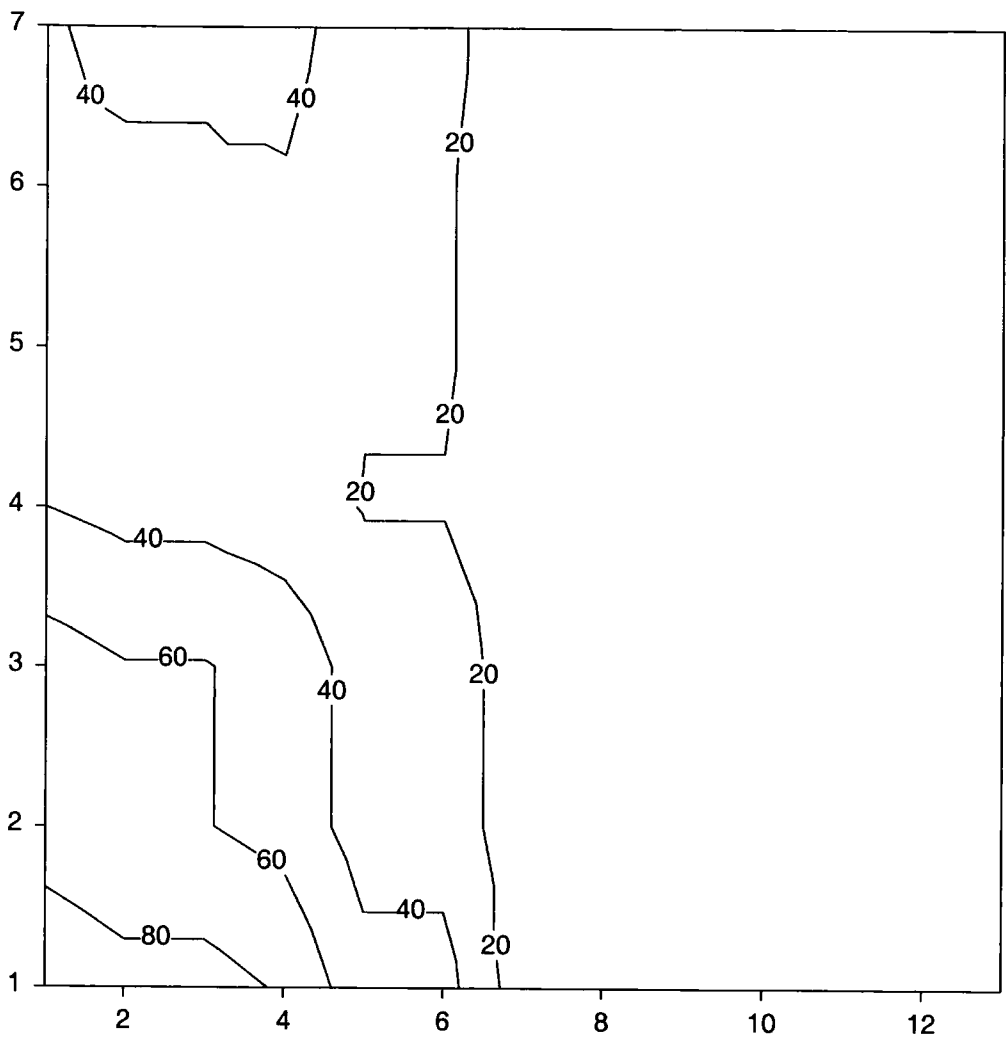


Fig.II.15.d. Interpolated contour plan of Köprübaşı: Late Neolithic (Çardakalti) sherd distribution (density of sherds per 100 m²).

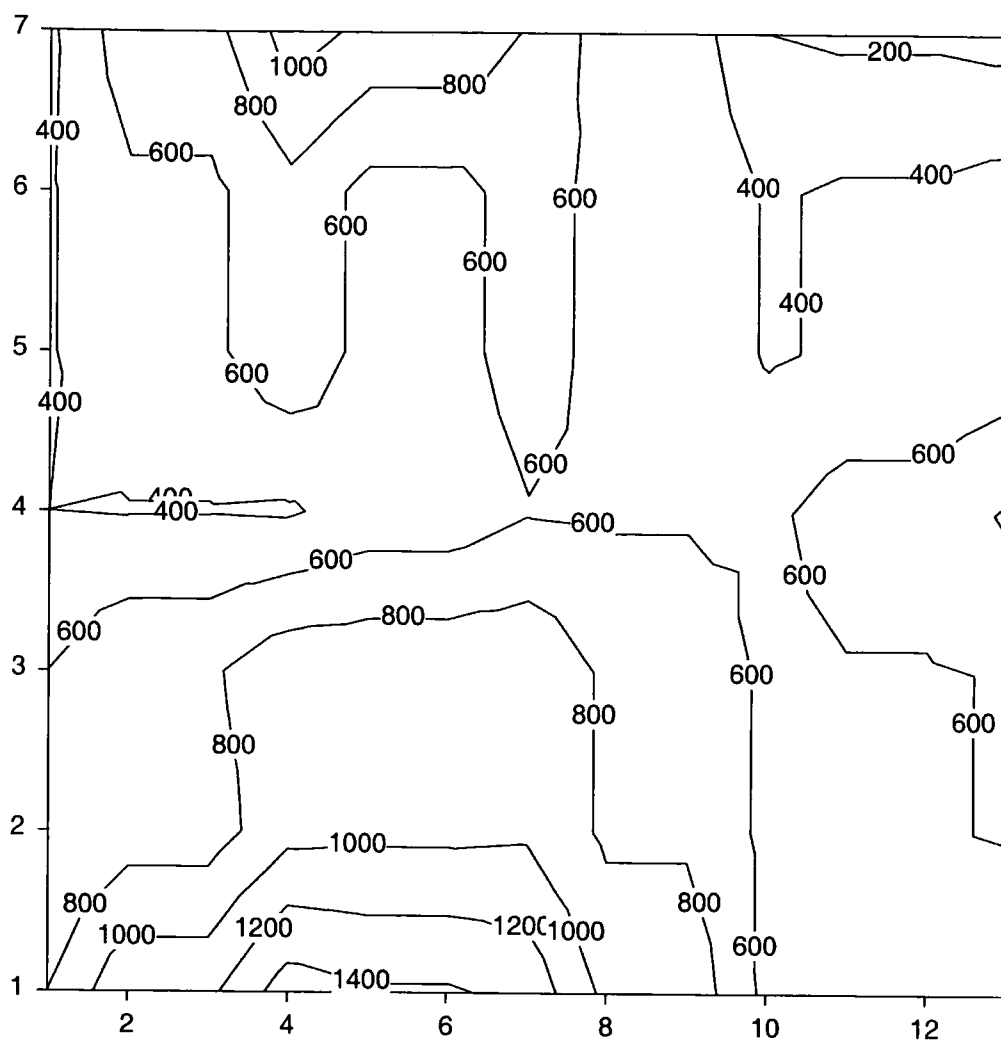


Fig.II.15.e. Interpolated contour plan of Köprübaşı: Pottery weight.

sunflowers, the other was ploughed. The visibility was "better than average". The main Edirne-Büyük Döllük road cuts through the settlement. The area to the East of the road was not examined. In the 1999 survey, Karanovo III, Çardakalti / Kalojanovec pottery were collected together with some Late Bronze / Early Iron Age and Roman sherds. Only 4 Early Bronze Age sherds were found in a single grid. A total of 829 prehistoric sherds and 130 flint implements was collected.

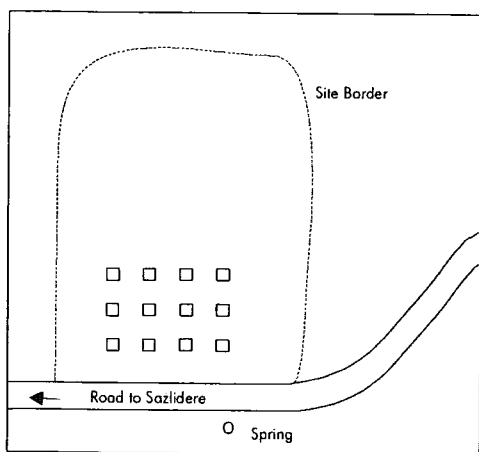
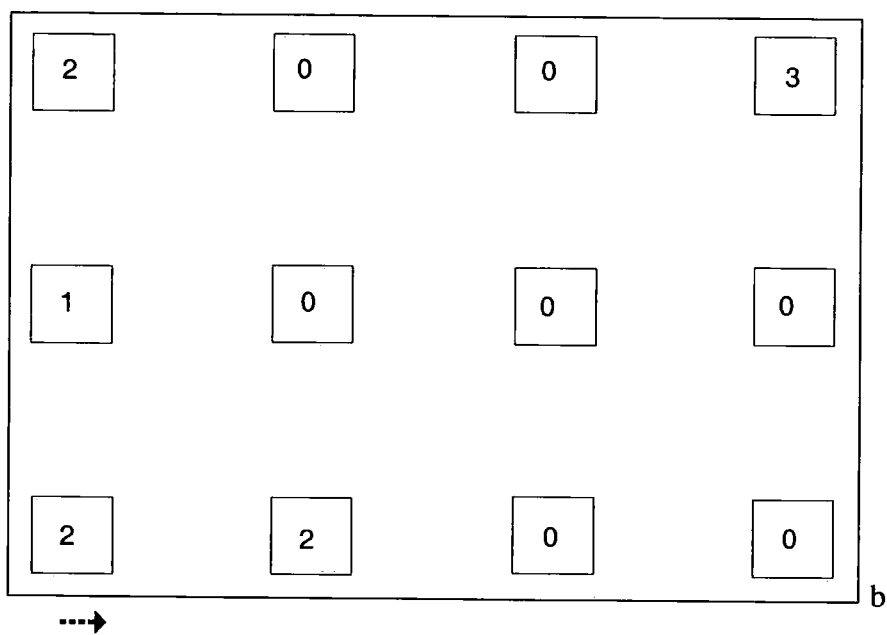
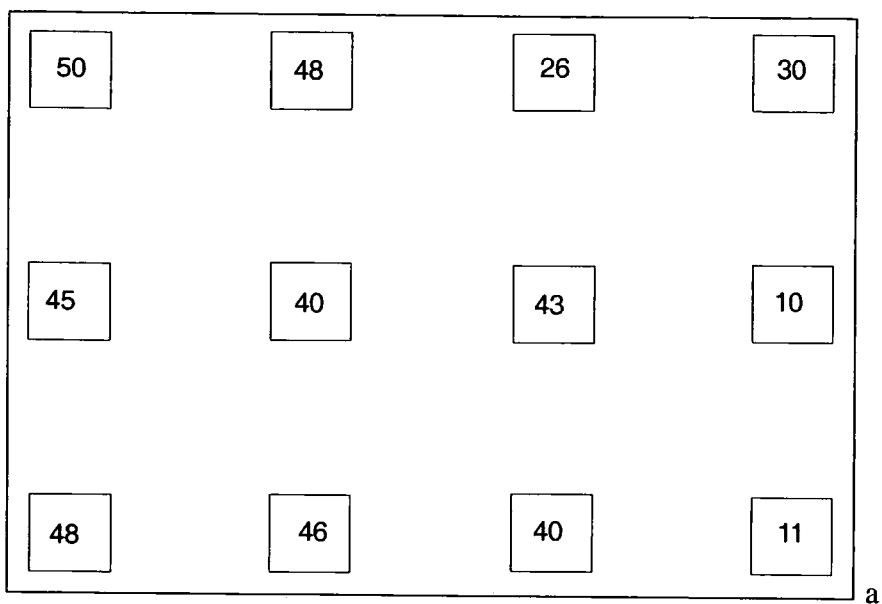
The survey results of the Karanovo III settlement show us a single concentration pattern of artefacts (Fig.II.15.c). A high density of artefacts was found close to the main road. The main concentration gives a density of 70 sherds per 100 square meters falling to 10 sherds to the South. Most of the sampled area has an average of 30-40 sherds per 100 square meters. The Çardakalti / Kalojanovec settlement is located in the South. The results of Çardakalti / Kalojanovec settlement show also a single concentration pattern (Fig.II.15.d). A high density of artefacts was found close to the main road. The main concentration gives a density of 80 sherds per 100 square meters, falling to 20 sherds to the North.

In Köprübaşı, there is a contrast between sherd distribution and sherd weight (Fig.II.15.e). Both Karanovo III and Çardakalti / Kalojanovec sherds were weighed together. There are two main concentrations of sherd weight - one in the East and the other in the West. The Eastern Concentration of sherd weight gives a density of 1.4 kg per 100 square meters, falling to 0.6 kg. The Western concentration of sherd weight gives a density of 1 kg per 100 square meters, falling to 0.6kg. The Eastern concentration matches the pattern of sherd numbers. The Western concentration was explained by the occurrences of the heaviest, therefore Çardakalti sherds in this part of the settlement.

Both settlements in Köprübaşı show a single-concentration pattern. Köprübaşı is a flat site lying on a tiny elevation on the flood plain. The perimeter of the settlement has been damaged by the main road. However, it seems there is no relationships between the road construction and the surface density of the artefacts. The single concentration pattern in Köprübaşı can be explained by the "site discard concentration" principle as mentioned above.

DEĞİRMENÇEŞME: The site was first discovered in 1986 during the prehistoric surveys of Istanbul University (Özdoğan 1988). The details of this survey have not yet published. There have been no publicly available recording inscriptions of the site and finds. In 1997, Degirmençeşme was re-surveyed during our extensive field survey, Çardakalti / Kalojanovec and Maslidere - type sherds were found together with a few Early Bronze Age and Late Bronze / Early Iron Age sherds (Erdoğan 1999a: 349).

In 2000, Degirmençeşme was examined intensively, using alternately - spaced 10 x 10 m grids. The site covered two different field-units both cultivated by wheat. The



c

Fig.II.16.a. Değirmençeşme; (a) absolute sherd counts, (b) chipped stone counts, (c) sketch plan of sampled area.

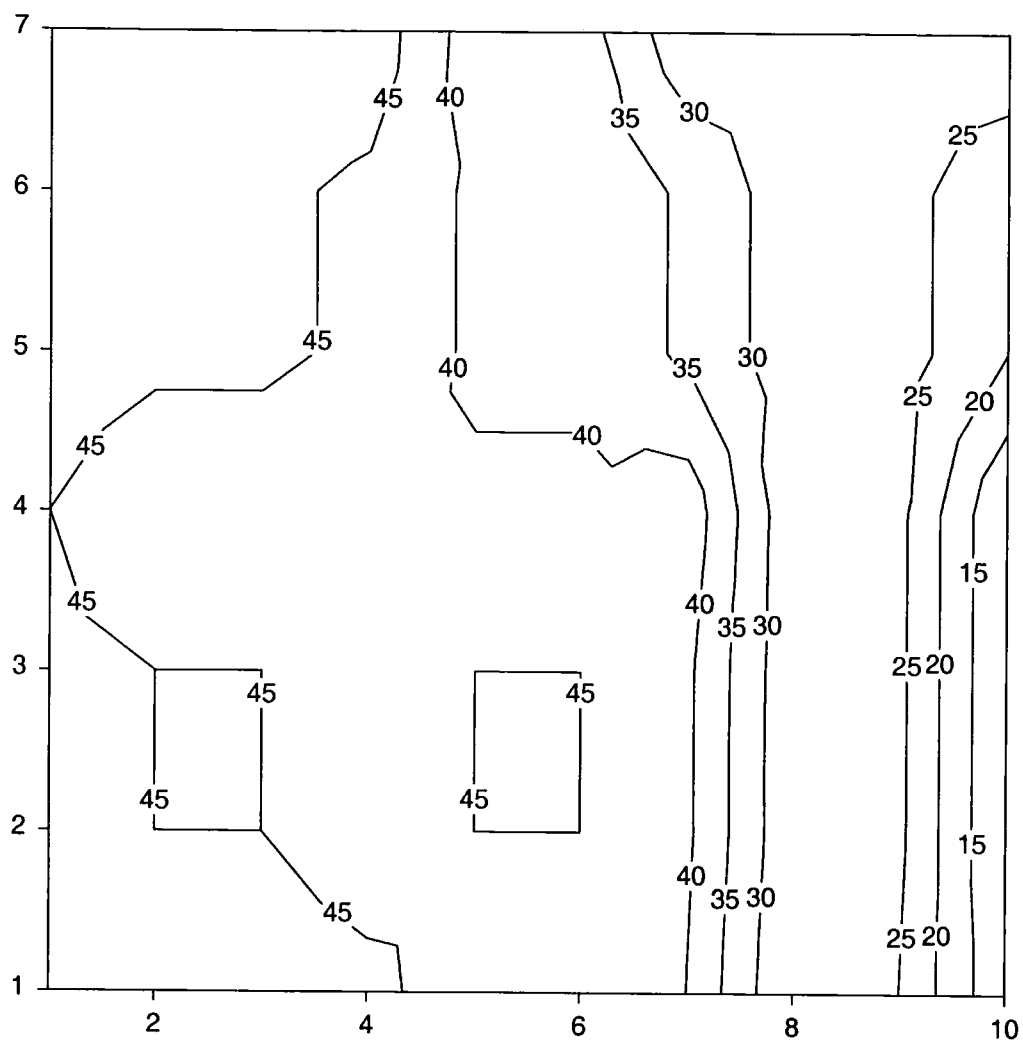


Fig.II.16.b. Interpolated contour plan of Değirmençeşme: Prehistoric sherd distribution (density of sherds per 100 m²).

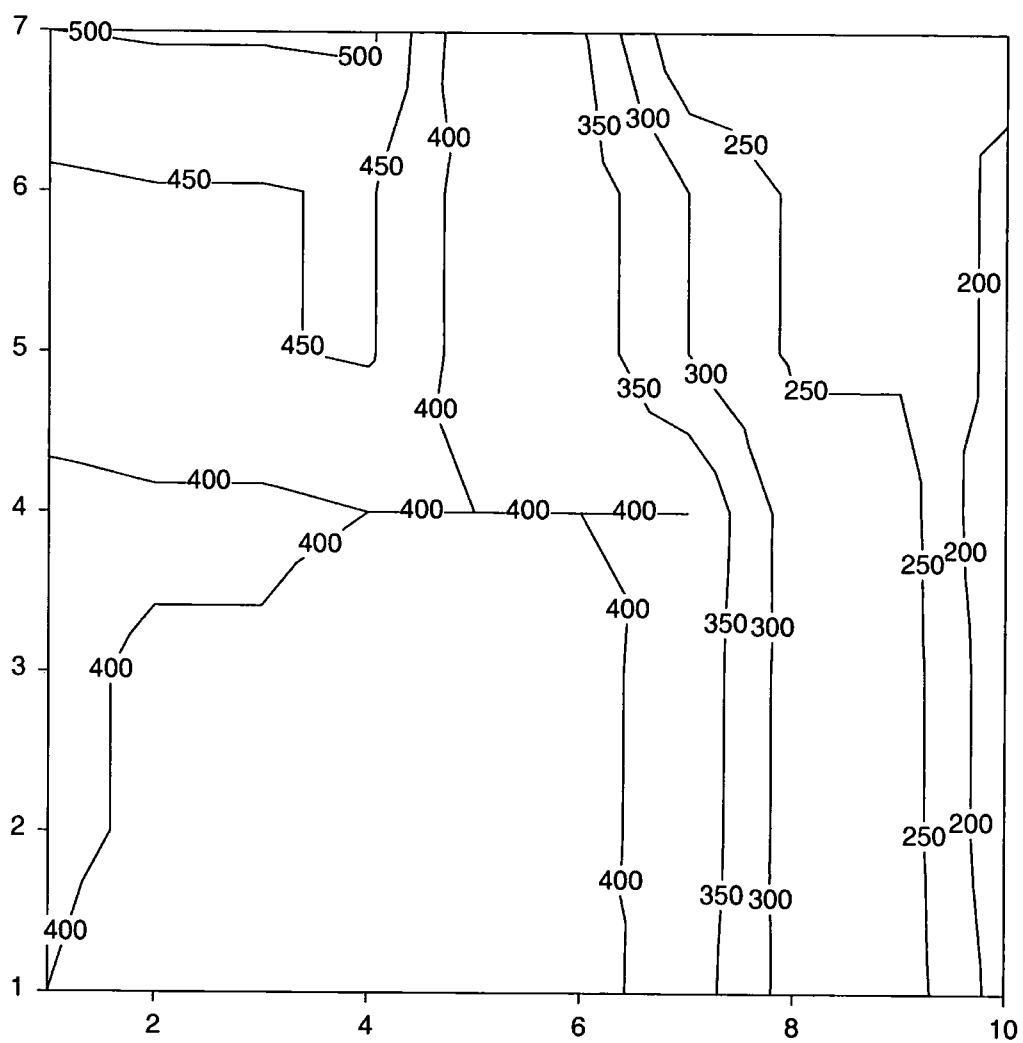


Fig.II.16.c. Interpolated contour plan of Değirmençeşme: Pottery weight.

visibility was very poor. The poor visibility of the ground made surface collection and interpret of surface artefacts difficult. The site was investigated over an area of 100 x 70 m, using alternately placed 12 10 x 10 m grids (Fig.II.16.a). Most of the sherds in Değirmençeşme were scrappy and heavily worn. We recognized only Çardakalti / Kalojanovec sherds. A total of 437 prehistoric sherds and 10 chipped stone implements was collected.

In Değirmençeşme, the recorded artefact distribution indicates a single-focus concentration pattern (Fig.II.16.b). Most of the sherds were concentrated in the South, and they give a density of 45 sherds per 100 square meters, falling to 15 sherds to the North. Most of the sampled area has an average of 40-45 sherds per 100 square meters. Most of the flint implements were discovered in the South.

In Değirmençeşme, there is a contrast between sherd distribution and sherd weight (Fig.II.16.c). The main sherd weight is concentrated in the Southwest and gives a density of 0.5 kg per 100 square meters, falling to 0.4 kg. The other concentration is located in the Southeast, and gives a density of 0.4 kg. Sherd weight is dropping off to the North until 0.2 kg per 100 square meters.

Değirmençeşme shows a single-focus concentration pattern. The site is marked by poor visibility. Thus, it is difficult to interpret surface density. Değirmençeşme is situated on a slope above the Iskenderköy stream. The site probably had suffered severe erosion and was represented by very worn sherds. Sediments are being washed downslope by rain and artefacts are left in position. Almost the whole site gives a density of about 40-45 sherds per 100 square meters. This may be explained by the "site discard concentration" principle" as mentioned above.

II.D.4. Concluding Remarks

The result of the transect survey, 1x1 km block survey and gridded survey are outlined above. The block and transect surveys have provided important evidence relating to settlement systems and past land use. The results of intensive block survey in the Kavakli-Ortakçi area showed that prehistoric settlements were marked by a series of abandonments and re-occupations. The settlements are often situated in areas previously occupied during the earlier periods. However, later arrivals seemed to settle not exactly on the top of early settlements but always nearby. A total of four settlements ranging from the Late Neolithic to Early Iron Age were found in a 1x1 km area. The Chalcolithic, Early Bronze Age and Late Bronze / Early Iron Age off-site artefacts were also discovered. Most of the off-site artefacts were found immediately around the settlements. The off-site artefacts in Kavakli-Ortakçi area can be explained by manuring, seasonal huts or accidental breakage.

As results of intensive transect survey in the Tepeyani-Bağlariçi area, sites, tumuli and off-site artefacts were discovered. Densities of surface remains on or around the habitation sites are a reflection of the spatial concentration of activities. In the Tepeyani-Bağlariçi area, Chalcolithic and the Late Bronze Age / Early Iron Age settlements were found only on the first terrace of the Süloğlu stream. Off-site artefacts, including Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Late Bronze / Early Iron Age sherds, chipped stone implements and an axe, were recorded within transect. Most of the off-site artefacts were found on the lower terrace. There is no evidence of Chalcolithic (Karanovo VI) off-site artefacts.

As a result of gridded survey, two types of pattern were distinguished: a multiple-focus concentration pattern and a single-focus concentration pattern. The explanation of such patterns can be explained in three different ways; 1. Prehistoric activities. 2. Environmental. 3. Modern disturbance. Chapman argues that the residents who lived in a Balkan village put their discarded objects and food remains together with midden-like discard not always into “rubbish pits” but also in outside areas between and beyond their houses (Chapman 2000b). On the basis of ethnographical evidence, a similar view was also given by Murray (1980). The discarded objects were ever-present, at least until they were trodden down into the ground surface. Over a long period of time, residents were living in this discard surrounding their living area. According to Chapman, this principle reaches its apogee on settlements, where the basic principle is one of living where the ancestors had lived (Chapman 2000b). House units with a high density of discard objects may be reflected on the surface as a high concentration of surface artefacts density. As a result of house planning and the quantity of discard, the concentration occurs either as a single focus or a multiple focus.

Erosion can also result in the concentration of artefacts. If the artefacts are larger and heavier than the soil matrix, sediments are being washed downslope by the rain and artefacts are left in position. This can result in a “concentration effect” on the surface density of material (Cherry et al 1991: 204).

Modern disturbance such as road construction, quarrying of sand, mining, irrigation, terracing and illegal diggings can also result in artificial secondary concentrations.

On the basis of extensive and intensive surveys in Turkish Thrace, in the next chapter, I shall discuss the settlement pattern in Turkish Thrace.

II.D.5. GAZETTEER OF SETTLEMENTS

1. Kavakli 1

Admin. Dist. : Province of Edirne, District of Lalapaşa, Village of Ortakçi.

Coordination: 41° 47' 19, 6" N, 26° 45' 10, 5" E

Altitude: 150 m

Map Ref.: E17

Location and Description: A flat settlement 500 m Southeast of the village of Kavakli, 300 m from the road leading to the village of Yağcılı, ca. 20 km Northeast of Edirne. It is situated on the North-Western side of the Çiftlik (or Ortakçi) stream. On the South side of the settlement, there is a narrow gulch. The site was first discovered in 1995 during our extensive survey in the area. It is 300x150 m in size and less than 1 m height. The pottery retrieved from Kavakli 1 is homogeneous, suggesting a single phase of habitation. The site is under cultivation. There is a small spring to the 300 m East of the site.

Periods: Chalcolithic (Karanovo VI) ; Hellenistic ; Roman.

Bibliography: Erdoğan 1997: 277 ; 1999a

2. Kavakli 2

Admin. Dist. : Province of Edirne, District of Lalapaşa, Village of Kavakli.

Coordination: 41° 47' N, 26° 45' E

Altitude: 160 m

Map Ref.: E17

Location and Description: A flat settlement 100-150 m North of Kavakli 1, just South of the village of Kavakli, ca. 20 km Northeast of Edirne. The perimeter of the site probably has been damaged by the modern village. It was first discovered in 1997 during our extensive survey in the area. It covers an area of 250x250 m and less than 1 m height. The pottery retrieved from Kavakli 2 is suggesting a single phase of habitation. The site is under cultivation.

Periods: Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe)).

Bibliography: Erdoğan 1999b: 349 ; 1999c.

3. Ortakçi / Kemer Köprü

Admin. Dist. : Province of Edirne, District of Lalapaşa, Village of Ortakçi.

Coordination: 41° 47' N, 26° 45' E

Altitude: 160 m

Map Ref.: E17

Location and Description: It is located ca. 2 km Northeast of the village of Ortakçi, ca. 20 km Northeast of Edirne. It is situated on the west side of the Ortakçi stream, just south of the Chalcolithic settlement of Kavaklı 1. The site was first discovered in 1995 during our extensive survey in the area. It is 300x 350 m in size and more than 3 m height. Probably a tumulus was located on top of the settlement. The site is under cultivation.

Periods: Late Neolithic (Kalojanovec) ; EBA.

Bibliography: Erdoğan 1997: 277.

4. Yumurta Tepe

Admin. Dist. : Province of Edirne, District of Havsa, Village of Hasköy.

Coordination: 41° 38' 15,7" N, 26° 52' 29,1"E

Altitude: 130 m

Map Ref. : E17

Location and Description: A flat settlement ca. 12 km North of the district centre of Havsa and ca. 1 km East of the village of Hasköy. It is situated on the East of the Süloğlu stream. To the East of the stream is a high terrace with an elevation about 130-140 m, on which the settlement has formed. It is about 300-400 m from the Yumurta Tepe Tumulus, which it was excavated in the 1940s. It was first discovered in 1992 and investigated during our extensive survey in 1995. Yumurta Tepe consists of two single period settlements side by side and both covers an area of 200x180 m. The site is under cultivation. There is a spring on the West side of the settlement.

Periods: Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI).

Bibliography: Erdoğan 1997: 280;1999a; 1999c.

5. Tepeyani

Admin. Dist. : Province of Edirne, District of Havsa, Village of Arpaç.

Coordination: 41° 42' 06.2" N, 26° 53' 14.2" E

Altitude: 120 m

Map Ref. : E17

Location and Description: Flat settlement ca. 18 km North of the district centre of Havsa, ca. 8 km South of the district centre of Süloğlu, 1.5 km north of the village of Arpaç. It is situated on the East side of the Süloğlu stream. There is no other source of water nearby. It is located on a first terrace of the stream. The main Süloğlu-Hasköy road cuts the edge of the settlement. There is a tumulus called Araç Tepe near the site. It was first discovered in

1995 during our extensive survey in the area. Tepeyani is a small site, measuring about 70x80 m. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) (?) ; Chalcolithic (Pre-Cucuteni / Maritsa (=Kocatepe) and Karanovo VI) ; Late Bronze / Early Iron Age.

Bibliography: Erdoğan 1995, 1997: 279.

6. Kumocağı / Avariz

Admin. Dist. : Province of Edirne, District of Merkez, Village of Avariz.

Coordination: 41° 43' 56,4"N, 26° 32' 33,7"E

Altitude: 60 m

Map Ref.: E17

Location and Description: It is located 8 km north of Edirne, ca. 2 km North of the village of Avariz, on the West side of the Tunca River. It is situated on a high terrace of the River. It was first discovered in 1982, during the survey of Istanbul University. The site has been damaged by a large trench dug for the quarrying of sand. However, during the our survey, a cultural stratum in the profile cut ca. 60-70 cm high was recovered in the East of the site. This cultural stratum is black in colour, and contains daub fragments, floor plasters and pits. The pottery retrieved from Kumocağı / Avariz is homogeneous, suggesting a single phase of habitation. There is a spring on the East side.

Periods: Late Neolithic (Çardakalti and Kalojanovec).

Bibliography: Özdoğan 1983d; Erdoğan 1995; 1997: 275.

7. Karabaş

Admin. Dist. : Province of Edirne, District of Süloğlu.

Coordination: 41° 44' 51,1"N, 26° 53' 15,4" E

Altitude: 175 m

Map Ref.: E17

Location and Description: A flat settlement 2.5 km Southwest of Süloğlu, ca. 28 km Northeast of Edirne, on the West side of a seasonal stream, namely Su Yolu. The main Edirne-Süloğlu road cuts through the settlement. On the Southeast side of the settlement, there is a deep, narrow gulch. It was first discovered in 1995, during our extensive survey in the area. Karabaş consists of two single period settlements side-by-side and surface finds cover an area of ca. 250 m. width. The site is under cultivation.

Periods: Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI) ; EBA (?) ; Roman.

Bibliography: Erdoğan 1997: 278-279.

8. Köprübaşı

Admin. Dist. : Province of Edirne, District of Merkez.

Coordination: 41° 43' 32,3"N, 26° 33' 47,9" E

Altitude: 10 m

Map Ref.: E17

Location and Description: A flat settlement ca. 5 km North of Edirne. It is situated in the confluence area of the Meriç River and the Paravadi Stream, ca. 100 m East of the Meriç River and ca. 700 m North of the Paravadi Stream. The main Edirne-Büyük Döllük road cuts through the settlement. It was first discovered in 1985, during the survey of Istanbul University. It consists of two single period settlements almost side by side. It covers an area of 300x250 m. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; Late Neolithic (Çardakalti and Kalojanovec) ; EBA (4 sherds only) ; Late Bronze / Early Iron Age ; Roman.

Bibliography: Erdoğu 1997: 276.

9. Kocatepe

Admin. Dist. : Province of Edirne, District of Süloğlu, Village of Küküler.

Coordination: 41° 44' 06,1"N, 26° 54' 11,3" E

Altitude: 120 m

Map Ref.: E17

Location and Description: A flat settlement 4 km South of Süloğlu, 2 km North of the village of Küküler. It is situated on the East side of the Süloğlu Stream, close to the Kocatepe Tumulus. The settlement has been completely destroyed by a road construction and materials have been scattered over a large area. Today it is impossible to determine the exact location of the settlement. Kocatepe was first discovered by M. Özdoğan in 1982, and from that time similar finds have been referred to as the "Kocatepe Culture". In 1995, the site was re-examined during our extensive survey in the area. In 1997, the Edirne Museum made soundings at Kocatepe. Four or five 1x1 m transects were opened ca. 500 m South of the Kocatepe Tumulus, finding a few sherds, but no signs of an archaeological level.

Periods: Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe)).

Bibliography: Özdoğan 1985a: 532, Erdoğu 1997: 278.

10. Kaynaklar / Arpaç

Admin. Dist. : Province of Edirne, District of Havsa, Village of Arpaç.

Coordination: 41° 40' 36,6"N, 26° 52' 37,0"E

Altitude: 100 m

Map Ref.: E17

Location and Description: A flat settlement ca. 14 km North of Havsa, 2 km South of the village of Arpaç, on the East side of the main Havsa-Süloğlu road. It is situated on the East side of the Süloğlu Stream, ca. 1 km from the stream and close to a spring. It was first discovered in 1995, during our extensive survey in the area. The artefacts were found over an area of ca 280/300x180/160 m. The site is under cultivation.

Periods: Chalcolithic (Pre - Cucuteni / Maritsa (= Kocatepe), EBA (?), Late Bronze / Early Iron Age ; Hellenistic ; Roman.

Bibliography: Erdoğan 1997: 279.

11. Kaldırım

Admin. Dist. : Province of Edirne, District of Merkez, Village of Hatip

Coordination: 41° 49'26,4" N 26° 33' 14,5"E

Altitude: 30 m

Map Ref.: E17

Location and Description: Flat settlement ca. 1 km East of the village of Hatip, ca. 1 km from Turkish-Bulgarian border. It is situated on a low terrace, on the West side of the Tunca River. The Hatip-Büyük İsmailçe village road cuts through the settlement. It is ca 1 m high and surface finds cover an area of ca. 250 m. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; Late Neolithic (Karanovo III-IV) ; Late Bronze / Early Iron Age ; Roman.

Bibliography: Erdoğan 1997: 276.

12. Kocahöyük

Admin. Dist. : Province of Edirne, District of Süloğlu, Village of Geçkinli

Coordination: 41° 45' N 26° 51' E

Altitude: 180-200 m

Map Ref.: E17

Location and Description: It lies ca. 5 km Southwest of District of Süloğlu, 2.7 km North of the village of Geçkinli. It is situated on a slope, on the East side of the Çatma Buz Stream, a tributary of the Söğütlü Stream. A big tumulus - Kocahöyük - is situated on top

of the settlement. There is a spring on the edge of the valley, close to the stream. It was first discovered in 1995, during our extensive survey in the area. Surface finds cover an area of ca. 300-350 m width. The site is mainly dating Early Bronze Age. However, a handful of Karanovo III pottery was present in 1995, but it was absent in 2000. The site is under cultivation.

Periods: Karanovo III (?) ; EBA.

Bibliography: Erdoğu 1997: 278.

13. Yağcili / Kaynaklar

Admin. Dist. : Province of Edirne, District of Süloğlu, Village of Yağcili

Coordination: 41° 47' 42,2"N 26° 50' 14,4"E

Altitude: 160 m

Map Ref.: E17

Location and Description: Flat site ca. 7 km Northeast of the district of Süloğlu, 1.5 km North of the village of Yağcili, ca. 300-400 m West from the Yağcili-Sülecik village road. It is situated on the Eastern slopes of the Yağcili (or Kaynak) Stream, a tributary of Oğulpaşa Stream. There is a source of a large spring under the settlement. Surface finds cover an area of ca. 250x250 m. The site is under cultivation.

Periods: Late Neolithic (Karanovo III-IV and Kalojanovec).

Bibliography: Erdoğu 1997:277.

14. Değirmençeşme

Admin. Dist. : Province of Edirne, District of Merkez, Village of Sazlidere

Coordination: 41° 37' 18,5"N 26° 40' 44,1"E

Altitude: 50 m

Map Ref.: E17

Location and Description: Flat settlement ca. 11 km Southeast of Edirne, ca. 1 km North of the village of Sazlidere. The perimeter of the settlement has been damaged by the main Iskenderköy-Sazlidere village road. It is situated on an Eastern slopes above the Iskenderköy Stream. There is a fountain under the road, West of the settlement. It was first discovered by 1985, during the survey of Istanbul University. Surface finds cover an area of ca. 200x200 m. The site is under cultivation.

Periods: Late Neolithic (Maslidere ; Çardakalti and Kalojanovec) ; EBA ; Late Bronze / Early Iron Age.

Bibliography: Erdoğu 1999a: 349.

15. Çardakalti

Admin. Dist. : Province of Edirne, District of Merkez.

Coordination: 41° 42' 18,5"N 26° 31' 57,1"E

Altitude: 70-80 m

Map Ref.: E17

Location and Description: It is located ca. 4 km North of Edirne, East side of the Edirne-Sarayakpinar road. It is situated on the West side of the Tunca River. To the West of the river is a high terrace, on which the settlement has formed. In 1960, Ş. A. Kansu undertook a small-scale excavation at Çardakalti, finding a single stratum of Late Neolithic (Çardakalti and Kalojanovec) period. Today the site is covered by garbage, making re-examination impossible.

Periods: Late Neolithic (Çardakalti and Kalojanovec).

Bibliography: Kansu 1963: 664-665 ; Erdoğan 1997: 274.

16. Altiagaç / Kirlik Mevkii

Admin. Dist. : Province of Edirne, District of Meriç, Village of Büyük Altiagaç.

Coordination: 41° 06' 56,3" N 26° 25' 04,6" E

Altitude: 50 m

Map Ref.: F17

Location and Description: A flat settlement ca. 8 km South of the district of Meriç, ca. 1 km Northwest of the village of Büyük Altiagaç, ca. 500 m East of the Büyük Altiagaç-Küçük Altiagaç village road. It is situated on a slope South of the Bozdere stream, a tributary of the Dişbudak stream. In the late 1970s, a farmer brought a large number of stone axes and potteries to Edirne Museum. In 1982, Altiagaç was investigated during the survey of Istanbul University. We re-investigated the site in 1997. There is a spring ca. 600 m west of the settlement. Surface finds cover an area of over ca. 250 m. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; Late Neolithic (Maslidere) Early Neolithic (Karanovo II – 3 sherds only).

Bibliography: Özdoğan 1985a:534 ; Erdoğan 1999a:346.

17. Maya Baba

Admin. Dist. : Province of Edirne, District of Meriç, Village of Büyük Altiagaç.

Coordination: 41° 05' N 26° 24' E

Altitude: 10 m

Map Ref.: F 17

Location and Description: It is located ca. 11 km South of the district of Meriç, ca. 1.5 km Southwest of the village of Büyük Altıağaç. It has been destroyed by a road leading to rice fields. There is a spring ca 1 km north of the settlement. It was first discovered in 1995 and investigated in 1997, during our extensive survey in the area. It is a small site, measuring about 60x60 m. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; EBA ; Late Bronze / Early Iron Age ; Hellenistic ; Roman ; Byzantine ; Early Neolithic (Karanovo II - 5 sherds only).

Bibliography: Erdoğan 1999a: 346.

18. Gavurdere

Admin. Dist. : Province of Edirne, District of Meriç, Village of Akçadam.

Coordination: 41° 18' 24,5'' N 26° 32' 23,3'' E

Altitude: 50 m

Map Ref.: F 17

Location and Description: A flat site ca. 16 km Northeast of the district of Meriç, ca. 1.5 km East of the village of Akçadam. It is situated on a slope, on the West side of the Gavurdere stream. It is ca. 1 m high and the surface finds cover an area over 200 m. It was first discovered in 1997, during our extensive survey in the area. There is a spring close to the site. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; Late Neolithic (Maslıdere) ; Roman ; Byzantine.

Bibliography: Erdoğan 1999a: 348.

19. Karsi Bağlar

Admin. Dist. : Province of Edirne, District of Meriç, Village of Nasuhbeyli.

Coordination: 41° 12' N. 26° 20' E.

Altitude: 10 m

Map Ref.: F 17

Location and Description: A flat settlement ca. 6 km West of the district of Meriç, Northeast of the village of Nasuhbeyli. It is situated on a terrace of a small stream. There is a spring within the settlement. It was first discovered in 1997, during our extensive survey in the area. The surface finds cover an area ca. 100 m width. The site is under cultivation.

Periods: Middle Neolithic (Karanovo III) ; Late Neolithic (Maslıdere) ; EBA.

Bibliography: Erdoğan 1999a: 347.

20. Bağlık Sirti

Admin. Dist. : Province of Edirne, District of Meriç, Village of Serem.

Coordination: 41° 18' N 26° 30' E

Altitude: 50 m

Map Ref.: F 17

Location and Description: A flat settlement ca. 15 km Northeast of the District of Meriç, ca. 2 km Southwest of the village of Serem. It is situated on a high terrace of the Meriç River. It is a small site, covering an area of ca. 60 square meters. It was first discovered in 1997, during our extensive survey in the area. The site is under cultivation.

Periods: Late Neolithic (Maslidere) ; Late Bronze / Early Iron Age.

Bibliography: Erdoğan 1999a: 348.

21. Arpalik Tepe

Admin. Dist. : Province of Edirne, District of Meriç, Village of Tevfikiye.

Coordination: 41° 04' 38,7'' N 26° 27' 43,4 E

Altitude: 10 m

Map Ref.: F 17

Location and Description: A tell ca. 2 km Northeast of the Village of Tevfikiye in the District of Ipsala. It is situated in the flat alluvial basin that consists of the Meriç and Ergene Rivers. The tell was almost completely destroyed by bulldozers opening rice fields. A small portion of the original core of the tell remains, which is ca. 80x80 m in size. We were able to collect material from disturbed sections.

Periods: Late Neolithic (Maslidere) ; EBA ; Hellenistic / Roman.

Bibliography: Erdoğan 1999a: 347.

22. Hamaylitarla (Buruneren)

Admin. Dist. : Province of Tekirdağ, District of Şarköy, Village of Kizilcaterzi.

Coordination: 40° 34' 9,0'' N 26° 56' 05.2'' E

Altitude: 80 m

Map Ref.: H 17

Location and Description: A flat settlement ca. 17 km West of the District of Şarköy, ca. 7 km West of the Village of Kizilcaterzi. It commands fairly extensive cultivable lands to the South. It is ca. 100x100 m in size and ca. 1 m high. There is a spring just near the settlement. The site is under cultivation. Besides pottery and flint implements, roughouts

and flakes of stone axes were also collected on the site, indicating a stone axe manufacturing area.

Periods: Early Neolithic ; EBA.

Bibliography: Erdoğan 2000 ; Özbek 2000.

23. Yartarla

Admin. Dist. : Province of Tekirdağ, District of Şarköy, Village of Sofuköy.

Coordination: 40° 40' 54,5'' N 27° 00 48,9'' E

Altitude: 120 m.

Map Ref.: H 17

Location and Description: It is located ca. 14 km Northwest of the District of Şarköy, ca. 3 km Northeast of the village of Sofuköy. It is situated on the South side of the Kavak Suyu River. Kavak Suyu runs through wide gorges, with steep sides that in some places rise vertically from the river, reaching a height of 200 m on which Yartarla has formed. It covers an area of ca. 100x200 m. The remains of a stone wall were noticed around the site. A stone axe factory was found in and around the site.

Periods: Late Chalcolithic ; EBA

Bibliography: Erdoğan 2000, Özbek 2000.

CHAPTER III. DESCRIPTION OF SETTLEMENT PATTERN

III.A. INTRODUCTION

Place commonly refers to a defined area, a fixed location (Relph 1983: 8). However, places are always far more than a definite area or locations, because they have distinctive meanings and values for persons (Tilley 1994: 15; Chapman 1998: 108). The relationships between space and place have been discussed by a number of "humanistic geographers", such as Yi-Fu Tuan. According to him, places are locations in which people having long memories for bygone generations. On the other hand, places are also the centre of power as well as meaning relative to their environs, the node at which activities converge (Tuan 1977). Tuan links place and space, defining the two as complementary ideas. First, 'in experience the meaning of space merges with that of place'. Second, 'from security of place we are aware of the openness, freedom and threat of space and vice versa. Furthermore, if we think of space as that which allows movement, than place is pause; each pause in movement makes it possible for location to be transformed into place' (Tuan 1977: 6). For Tuan space is given by the ability to move. Monuments are directed toward, or repulsed by places as objects. Space can be variously experienced as relative location of places, as the distances that separate or link places, and more abstractly, as the area defined by a network of place. His definitions of space and place appear to derive from a felt need to define relationships that can be seen in landscape. The idea of space he equates with wide-open vistas or panoramas implying unhindered movement. The idea of place he equates with enclosure (Tuan 1977: 54). Parkes and Thrift argued that the realization of place as a day-to-day dynamic lies in the structuring of space. If the essence of place is timed space, the timing component gives structure to space and thus evokes the nation of place (Parkes and Thrift 1980).

Most significant places are located or positioned in space. Locales are places created and known through common experiences, symbols and meaning (Tilley 1994: 18). Locales may offer a distinct quality of being inside, or part of, a place. People both live out their lives in place and have a sense of being part of it. People and places are hard to separate because the identity of a person is tied to that of his or her place. A sense of attachment to place is frequently derived from the stability of meanings associated with it (Tilley 1994). A sense of place is formed through the sedimentation of symbolic and emotional meanings, memories and the attachments to people and things, which arise out of past practices and their underlying power relations. According to Strathern, it is the objectification of place-value and place-meaning by users - not only the places themselves but also the identity of the places and of the persons who use and inhabit the places (Strathern 1988: 175).

Places were variously associated through a social network of ancestral traditions and historical narratives, each with its own values and myths (Chapman 1998). Distribution of places across landscape and the spatial relationship between places give us a settlement pattern. A settlement pattern comprises a network of settled places, which were once occupied, abandoned and re-occupied. A settlement pattern relates to settlement dynamics in a landscape or a region throughout time.

III.B. SETTLEMENT PATTERNING

The study of the location and spatial arrangements of sites is called settlement pattern analysis. The analysis of settlement patterns can be used to reconstruct and explain the organization of human societies and their interactions with the surrounding environment. There are three levels of analysis: site size, the plan of communities and the spatial relationships of communities to one another (Gibbon 1984).

Archaeologists have usually applied one of two basic approaches to the study of settlement patterns: the political organization of past societies and past economic organization. The political organization of past societies can be derived from settlement data. Settlements are often arranged in hierarchies. Hierarchical relationships between contemporaneous settlements come into existence when activities or services are not in sufficient demand to support their presence at lower levels. As a result, specialist centres tend to be spaced further apart than villages and other small habitation settlements. Centres like these perform all of the functions of lower-order centres plus a group of central functions that differentiate them from lower-order settlements. These insights into the important influences that central functions have on settlement of central place theory help to shape a model to examine the spatial organization of a group of related sites, in order to identify hierarchical networks (Johnson 1977: 494; Flannery 1976: 170 ; Hodder and Orton 1976: 60). Central place theory was developed by a geographer, W. Christaller, working with Western, market-based economy societies featuring a maximizing economy (Flannery 1976). The classical central place models of Christaller (1966) and Lösch (1954) are generally considered to be restricted in applicability to the analysis of retail production and marketing. In his initial formulation of Central Place Theory, Christaller proposed ways in which a settlement system associated with a modern market economy could be spatially organized to perform certain types of work of goods and services (Johnson 1972). In this sense, central settlements or places of the same size and nature would be situated equidistant from each other, surrounded by a constellation of secondary centres with their own, smaller satellites. Territories are packed together in a hexagonal shape and the relationships between settlements were suggested in a proposed lattice (Hodder and Orton 1976: 60; Johnson 1977). According to Christaller's hierarchical system, 1. all centres are

the same size and have the same service functions; and 2. all higher-order centres possess all the functions of the lower-order centres. However, Lösch's hierarchical system is different; 1. settlements of the same size need not have the same function; and 2. larger centres need not have all the functions of the smaller centres. A hexagon is the most economic form for the equal division of an area between a number of points (Bray 1983). However, as Johnson's study shows, it is not necessary to have perfect hexagons to show statistically significant structuring of settlement owing to the service functions of major centres (Johnson 1972). In his study in the Diyala region of Iraq, instead of hexagonal pattern the rhomboidal pattern occurs. Johnson's study shows the difficulties of applying Central Place Theory to a real archaeological case. An alternative pattern of spatial organization was outlined by Hodder (Hodder and Orton 1976: 63). The size of the tributary area to which one range of goods is provided will vary with the size of the service centre. The aggregate of all services provided by the higher centre attracts people from a greater distance and reduces the lower centres areas even in those primary and secondary services in which they duplicate the higher centre. Thus, the smaller centres are not likely to develop as close to large centres as they are to one another.

There are three problems in using Central Place Theory to interpret archaeologically recovered settlement patterns (Paynter 1983). First, due to uncontrollable biasing processes, some sites of a past system will have been eliminated. Thus, archaeologists are not likely to recover the entire pattern of the past system. Second, due to the spatial scale of past ways of life, any settlement pattern is not likely to be interpretable with a complete settlement system. Third, the institutional assumptions underlying conventional Central Place systems are not likely to be relevant for interpreting past sociocultural systems (Paynter 1983: 234). These points suggest that Central Place Theory cannot be simply applied to settlement patterns. I believe that it is difficult to apply Central Place Theory to the early prehistoric settlements in the Balkans.

Hierarchy analysis, however, presents problems for most archaeological survey data. Archaeological survey data rarely include more variables per period than site location and site size. A solution lies in analysing the entire distribution of settlement sizes without requiring the isolation of individual hierarchical levels. Rank-size analysis is one such analytic procedure (Johnson 1977; Hodder and Orton 1976). There is a relationship between the site size and their importance in rank order by size, which is then displayed as a histogram. Histograms allow comparisons to be made between the site hierarchies of different regions, different periods, and different types of society. Rank-size analysis evaluates the intensity of centralization in a settlement system by assuming that the degree to which a site is dominant is reflected in its size relative to associated sites.

Another method that can be used in the study of settlement patterns is the construction of Thiessen polygons. The resulting polygon is considered to bind the areas

that would have been most efficiently served by settlements, for every point within the polygon is closer to its central place than to any other. The polygons are created by drawing straight lines between each contemporary pair of neighbouring sites, then at the mid-point along each of these lines a second series of lines, at right angles to the first. Linking up the second series of lines creates the Thiessen polygons, and in this way the whole of an area can be apportioned among the sites it contains (Hodder and Orton 1976: 60). This procedure takes no account of differences in size or importance of sites. A small site will have as big a polygon as a large site. Here, we can also talk about the concept of community area outlined by Neústupný in his study of prehistoric settlement patterns (1991).

In this formulation, the landscape was divided into more or less regular spatial segments corresponding to basic economic and social units, that is, to prehistoric communities. The presupposition of the segmented character of the cultural landscape is based upon theoretical generalization about the prehistoric economy and social system. The concept of community areas is based open the notion of a community sharing a common territory and co-operating in certain economic and social activities. The community areas were divided using the method of Thiessen polygons, each focused on either single or multiple of different size of sites. Each community area has a certain function that corresponds to the practical needs of the community that settled it (Neústupný 1998).

Another settlement pattern - the linear stream pattern - was outlined by Flannery on the basis of Mesoamerican examples (Flannery 1976: 173). In many parts of Mesoamerica, settlements are located on rivers. Major or minor settlements or places would be situated equidistant from each other along rivers, constituting a linear form. The principle of equidistant spacing is as set forth in Central Place Theory. According to Flannery, the settlements in a linear stream expanded in axial, one-dimensional mode upstream and downstream (Flannery 1976).

Sometimes sites occupying the same level in settlement hierarchy might not be of the same size. Thus the capital city of a state on the periphery of a distribution could be smaller than a secondary city in the centre. In this occasion the technique of XTENT modelling was used by Renfrew and Level (1979). This has the aim of assigning territories to centres according to their scale. To do this, it assumes that a large centre will dominate a small one if they are close together. In that case, the territory of the smaller site is simply absorbed in the study into that of the large one. This approach overcomes the limitation of the Thiessen polygon method, where territories are assigned irrespective of the size of the centre, and where there are no dominant or subordinate centres.

Settlement analysis focuses on also past economic organization. One of the most common methods is catchment analysis. The site catchment approach was introduced to

archaeology by Vita-Finzi and Higgs (1970: 5). They defined the objective as 'the study of the relationships between technology and those natural resources lying within the economic range of individual sites'. The aim is to estimate a site's resource base and overall productivity calculated on the basis of a hypothesised economic range (Roper 1979: 120). Throughout the 1970s, many archaeologists adopted the technique in widely separated countries around the world. However, during the 1980s and 1990s, only limited publications have appeared. The reasons for the limited success of the approach are varied, but can broadly be ascribed to philosophical and technical difficulties. Using ethnographic data, it was estimated that hunter-gatherers normally exploit an area of roughly 10 km radius around their base, or a radius of 2 hour's walk. Farming communities, on the other hand, normally use an area of about 5 km radius, or 1 hour's walk (Flannery 1976: 91). The Cambridge palaeoeconomy group suggested that a global average of human walking-time of some 5 km an hour would allow archaeologists to set territorial radius for sites in each of the three main economies - hunter-gatherer, pastoral and cereal farmer - at a 2 hour, 1.5 hour and 1 hour distance respectively from the settlement (Bintliff 1999). In practice, practitioners of catchment analysis had realized that map distance for walking-times of 2, 1.5 and 1 hour varied according to physical relief. On a completely flat plain without a major river crossing, one might walk as much as 7 km in an hour, whereas in very rugged hill country, one might walk as little as 2 to 3 km as the crow flies away from the settlement (Bintliff 1999). The catchment analysis plots the distribution of varying land classes, topographic details, vegetation and water resources within the territory. According to Bintliff, 'the overall bounded territory was especially favourable for the needs of that past community, but a further consideration of the underlying principle of the friction of distance would suggest that, even with the territory, those resources to be given most attention or demanding most labour would be found closest to the home base. Thus it was predicted that the evaluated contents of the bounded territory would be found to be unusually rich - those resources exploited by the past community compared with their distribution in the region as a whole' (Bintliff 1999: 507). Furthermore, the ancient settlement might have been surrounded by a series of land use zones, up to the territorial boundary, all concentric around the residential focus, with those subsistence activities demanding most labour being practised in the innermost zones, and the least demanding economic activities being carried out in the outer zones (Bintliff 1999).

There are a number of problems with using catchment analysis. For instance, how we do approximate catchment size and shape with anything but time of distance contours when the site sample is non-systematic (Roper 1979)? Attempts to circumvent these problems have included the approach used by Flannery in his study in Oaxaca, Mexico (1976:103). His work suggests a zonation of resource use, but also document a total catchment area far larger than the analytic territory used in most studies. Flannery reversed

the procedure, starting with data on the plant, animal, and mineral resources found at sites and asked from how far away must they have come? The analysis considered all kinds of resources from the commonest plants to the most exotic trade items. It required good faunal and floral preservation, detailed study of those remains, and comprehensive knowledge of resource distributions. Most basic plant and mineral needs were satisfied within 5 km of the site, but animals, wood, and exotic materials come from further away. Bintliff suggested a simple technique such as the construction of Thiessen Polygons rather than taking a measurement such as the inter-site distance as a reliable guide to the average radius or radius-equivalent of a settlement's catchment (Bintliff 1999: 522). Villages may appear to cluster closely when they are located on restricted a resource that is clustered, but their individual territories may extend asymmetrically to greater distances. In contrast, in a landscape where resources vary little two-dimensionally or are found widely or discretely, settlement locations may be found to approximate closer to the geometric focus of circular territories. Another important study is that of Foley (1977). He developed an ecological model accounting for differential productivity in an area. This model was free of specific loci, instead using quadrates superimposed on a general resource zone map of an area in which some sites were assumed to be located. This approach would then analyse the energy balance by subtracting the value of the energy necessary to exploit an area from a given locus from the extracted energy.

A fundamental criticism using catchment analysis to reconstruct past economic patterns is the assumption that modern resource distributions are similar to those in past times when an archaeological site was occupied. Changes in climate and environments and their effects on biological and other resources, may present non-measurable distorting factors that are not always taken into consideration. Another criticism of territorial analysis takes issue with the central assumption that past human communities have adapted their behaviour to ecological principles, either intuitively or consciously. Ethnographical evidence shows that the village site in Africa is surrounded by an extensive zone of the poorest agricultural land, beyond which lies far better soil. The reason for this situation was prolonged, intense, cultivation of the area closest to these villages in a landscape with naturally poorly developed soils, resulting in soil impoverishment. This society practiced a cyclical relocation of villages onto fresh soils when land exhaustion reached a critical level, in a pattern of shifting agriculture (Bintliff 1999). The Nuba of the Sudan, whose farming villages lie along very poorly resourced ridges, avoid fertile valley land below. The reason was that the valley land has become occupied by a different ethnic group that has driven the indigenous people into marginal hill locations for their livelihood (Bintliff 1999).

Other settlement analysis techniques are useful for reconstructing regional economic interaction. For example, trend surface analysis uses regional artefact or resource

distributions to identify their sources, delineate economic boundaries and reconstruct mechanisms of exchange. The value of trend surface analysis is in distinguishing regional and local trends, and in providing a certain degree of objectivity in this procedure. It further allows generalisations to be made from complex patterns, and makes interpolation and prediction possible (Hodder and Orton 1976: 155).

For societies exhibiting greater socio-political complexity, transportation systems can be examined using network analysis (Hodder and Orton 1976). This technique quantifies the linkages between settlements within a defined region and produces indices evaluating the centrality, importance, and accessibility of any given site as well as the general compactness and connectivity of the settlement system.

III.C. SETTLEMENT TYPES

One of the first steps in the analysis of any settlement pattern is the development of a settlement typology. Three dimensions of variability will be used in this typology: form, site spacing and size. The form of a settlement represents a spatial order, which is more than simply a reflection of social order of its community. Settlement form is a major factor in the regulation of social relations and, as such, is integral to social life itself (Chapman 1989). The dimension of site size can be related, through surrogate measures of site population density and population across a landscape. Renfrew and Poston (1979: 439) identify the mid-point between dispersed and nucleated settlement as villages of 50-1000 inhabitants. Whilst there is broad empirical support for these size limits, the variations in group dynamics for communities of 50 and 1000 make finer distinctions necessary, both in size and community services, but especially in the continuum of dispersed-nucleated settlement. There are also questions of length and seasonality of occupation. Three of Chang's settlement categories were proposed by Chapman (1989). 1. Permanent year-round settlement. 2. Semi - permanent year - round settlement. 3. Sedentary seasonal settlements used as permanent bases. We exclude temporary seasonal settlements for lack of core residential work-groups and land-holding stability. Hence the term 'village' is defined as a more or less nucleated settlement a permanent base, with a community size range of 50-1000 and a community service range often related to its size (Chapman 1989: 36). This definition clarifies the difference between villages and hamlets (a cluster of several families up to a total of 50 people) and the farmstead (a single family residence of up to 15 people).

In the Neolithic and Chalcolithic periods of Southeast Europe, two main types of site can be recognised: tells and flat settlements. Several differences between the spatial organization of tells and flat settlements were outlined by Chapman; 'different locations for communal activity (focal points outdoors for flat settlements, indoor or off-tell for

tells), different potential for settlement expansion (greater for flat settlements, less for tells), a different degree of tolerance of dimensional variability (greater for flat settlements, less for tells), and different attitudes to the maintenance of tradition in the landscape (more stability on tells, less stability on flat settlements)' (Chapman 1989: 39). One of the clear differentiations between tells and flat sites is size. According to Chapman, the individual small family household was the basic residential unit in the Eastern Balkans (Chapman 1989). Model village sizes can be defined for the tell cultures of the East Balkans, where the minimal village community size of 60-120 people is rarely exceeded. Flat settlements in the Eastern Balkans exhibit far greater variability in form, planning and size than a standard, almost model unit of tells. The size range of flat settlements is larger than that of tells. The large nucleated tells occurred later, in the Copper Age (Chapman 1989). Another important point of contrast between tells and flat settlements are the degree of potential for settlement growth and expansion. In nucleated tell settlements, the potential degree of growth and expansion is less than for dispersed flat settlements (Chapman 1989). There are also several differences between settlement components on Tells and flat settlement. Residence on tells precludes the incorporation of arable or pasture land on to the tell surface. They achieved land holdings as a complex pattern of scattered holdings and a radiating block form. In flat settlements arable and grazing land lies in the immediate vicinity of the houses. The juxtaposition of "house and garden" in a spatial unit is strikingly different from those on tells (Chapman 1989).

III.D. SETTLEMENT MOBILITY

Occupation at the settlements of the Edirne region was marked by series of abandonments and re-occupations. Settlements can be described as mobile, re-occupied flat settlements. Mobility is a property of individuals, who may move in many different ways, alone or in groups, frequently or infrequently, over long or short distances. Our criterion for defining settlement mobility is movements of a group from one location to another, with the aim of settling down for a longer or shorter period of time.

The term of mobility or mobile societies is generally used for hunter-gatherers (Binford 1980; 1983; Kelly 1992; Foley 1981a). Binford began to unpack the concept of mobility by differentiating between "residential mobility", movements of the entire band or local group from one camp to another, and "logistical mobility", hunter-gatherer movement of individuals or small task groups out from and back to the residential camp (Binford 1980). Binford used these terms for two ideal hunter-gatherer settlement systems - collectors and foragers. Collectors move residentially to key locations and use long logistical forays to bring resources to camp. Foragers 'map onto' a region's resource locations. Foragers do not store food. They make frequent residential moves and short

logistical forays. Collectors store food and they make infrequent residential moves but long logistical forays (Binford 1980). Binford later added another term, known as "territorial or long-term mobility" (Binford 1983). A territorially restricted group visits the same places repeatedly each season, using fixed facilities such as shelters.

Planned tell settlements with developed houses and a large quantity of artefacts of the Balkans have generally been accepted as evidence for long-term permanent habitation. However, the concept of long-term permanent occupation has come under criticism due to a re-examination of tell settlements, studies of hunter-gatherer complexity and recent research on the relations between settlements and their landscapes. The study of sedentism in non-Neolithic and early Neolithic societies and social anthropological studies of complex hunter-gatherers indicate that sedentary life style cannot be used as a hallmark of the Neolithic. If such forms of sedentary life are used as signifiers of especially the earliest Neolithic, then Neolithic society began developing in the Mesolithic. The study of Mesolithic and early Neolithic groups of the Iron Gate suggested that the Iron Gate communities lived in permanent houses, subsisting without dependence on agriculture and animal breeding (Srejović 1972; Chapman 1993; Radovanović 1996).

A large number of burials have been recorded within the nine Mesolithic sites of the Iron Gates, such as Lepenski Vir, Vlasac, Padina, Schela Cladovei (Radovanović 1996: 161). Important work on the hunter-gatherer social complexity in Denmark-*Ertebølle* Culture, suggested that some of the sites, such as Skateholm I, were seasonal camp sites but buried their dead in a cemetery (Rowley-Conwy 1992: 1). The seasonal occupation of Skateholm I was very large and the adjacent cemetery contains some 50 inhumations. In *Oleneostrovski Mogilnik* (Red Deer Island) in Karelia, Russia about 177 Mesolithic burials were excavated and total number of graves at the site has been estimated at more than 400 (O'Shea and Zvelebil 1984; Jacobs 1995). In other areas of the Northern and Western Europe, the Mesolithic cemeteries associated with semi-sedentary and / or semi-nomadic (?) groups were also found e.g. *Moita do Sebastiao* (Roche 1989), *Amoreiras* (Arnaud 1989) in Portugal and *Vedbæk* in Denmark (Price 1985), *Zvejnicki* in Lithuania (O'Shea and Zvelebil 1984), *Téviec* and *Hoëdic* in France (Schulting 1996). We might suggest that the cemeteries could be a very important key factor for occupation of some hunter-gatherers. Some hunter-gatherer communities occupy fixed settlements at different seasons (cf. territorial mobility of Binford), and these fixed settlements are marked by cemeteries. Ancestors probably play one of the important roles for sedentism. On the basis of ethnographical studies, Kent argues that some groups make seasonal trips but return to a permanent camp where they reside for the majority of the year (Kent 1989: 2). In *Dragsholm* in *Zedland*, Denmark, a Mesolithic and a Neolithic grave were found side by side (Bradley 1998: 22). A Neolithic cemetery was also preserved on Red Deer island (Jacobs 1995: 347). In the early Neolithic, burials were found in many sites in Central and

Southeast Europe (Borić 1999: Fig.24). However, Early Neolithic burials are small in number compared to Mesolithic burials. Parts of human skeletons were found buried in some important early Neolithic tells, such as Anza (Némeskeri and Lengyel 1976: 376), Nea Nikomedia and Azmak (Whittle 1996: 59).

We should consider that the broader elements of the ideology of the Neolithic such as the cult of the ancestors or the permanent houses could be found already in the Mesolithic. The more established social anthropological studies of complex hunter-gatherers also showed that non-sedentary complex communities engaged in activities, ideologies and belief systems little different from those of settled communities (Bradley 1998). Zvelebil argues for considerable continuity in social organisation across the economically defined Mesolithic-Neolithic transition (Zvelebil 1998: 23)

Farming societies in the Balkans show signs of mobility. Recent geo - archaeological research in Northern Greece showed that the settlements of the flood-plain early agricultural tells were temporary and not permanent (van Andel et al. 1995). The research suggests that flood plain tells, such as Platia Magoula Zarkou and Koutsaki Magoula, were occupied only outside the flood season. Study of the soil history shows that early Neolithic activity at both sites occurred when flooding was frequent. Runnels and van Andel noted that many early farming flood plain sites exist in Southeast Europe, for example Körös settlements in Hungary (van Andel and Runnels 1995: 494). However, more recent investigations in the Tisza region in Hungary showed that only a few Neolithic sites lie on tiny elevations in the flood-plain. Most of the sites were set back from the flood-plain edge (Chapman 1994b: 81). Wilkie and Savina suggested that the early Neolithic sites in the Grevena region, Southeast Macedonia, do not show that preference for flood-plain environments, which van Andel and Runnels suggest for the Larisa basin (Wilkie and Savina 1997). At Anza in Macedonia, no break is known between the early agricultural strata (Gimbutas 1976: 29). Phase I at Anza is the earliest occupation and it is divided into two; Ia and Ib. The transition from Ia and Ib is gradual with no obvious break. Similarly, the cultural sequence at the tell of Achilleion, Thessaly was divided into four main phases, covering without interruption most of the Early and Middle Neolithic (Gimbutas et al. 1989). Bailey suggests that tell settlements in the Balkans such as Ovcharovo in North-Eastern Bulgaria are marked a long series of abandonments and re-occupations (Bailey 1997). According to Bailey, the stratigraphy of Ovcharovo is marked by 13 episodes of house building and house destruction and collapse (Bailey 1990; 1997). The thirteen horizons documented long-term episodes of settlement abandonment. According to Bailey, most important evidence for tell abandonment in the North Bulgarian tells is seasonal flooding (Bailey 1997). The specifics of house rebuilding and repair and the use of so-called fortification walls as barriers were attempts to control flooding. However, about 10 tells were investigated by Todorova in Northeast Bulgaria, all higher

than river by 2 m or more, and only one of them can be described as a flood-plain tell (personal communication, J. Chapman). It seems that in Southeast Europe two types of Early Neolithic tell settlements may be recognized; seasonal tells (e.g. Platia Magoula Zarkou) and permanent tells (e.g. Anza).

Another factor in settlement mobility is the transhumant grazing requirements of the settlement's sheep, goat and cattle. Summer conditions in the flood-plains did not favour animal production and people would have taken herds of animals into the neighbouring foothills and highland pastures for grazing (Whittle 1997: 20). There are also social and ritual reasons for settlement mobility. For example, Sedentary Tswana settlements in Botswana were traditionally moved every 10 to 15 years (Kent 1989).

III.E. SETTLEMENT PATTERN IN TURKISH THRACE

The foundation of settlements of Turkish Thrace is linked to a number of predictable factors, such as locational preference for riverine environments, the selection of fertile soils for agricultural exploitation, proximity to water sources and natural lines of communication (Fig.III.1 ; Fig.III.3 ; Fig.III.4 ; Fig.III.5). There are some very serious gaps in our knowledge of the Turkish Thrace settlement patterns. An extensive survey was conducted in Turkish Thrace by the University of Istanbul but there is no detailed publication or information about settlements (size and location), so explaining settlement patterns is difficult. In Turkish Thrace, there are differences in the settlement patterns of two investigated areas - the Ergene basin, the Gelibolu Peninsula and the Northern shore of the Sea of Marmara. The Ergene basin constitutes the main central plain of Turkish Thrace. Settlements from the lower and upper Ergene Basin are marked by flat settlements rather than tells. Tells are the typical settlement type in the Northern shore of the Sea of Marmara and the Gelibolu Peninsula. Only two tells - Keşan-Mezarlık Tepe and Arpaliktepe-Ipsala - were found in inner Turkish Thrace, dating mostly to the Early Bronze Age. Most of tells found on the Northern shores of the Sea of Marmara and the Gelibolu Peninsula is also dated to the Early Bronze Age.

The Early Neolithic settlements - Hoca Çeşme, Hamaylitarla and Kaynarca - were found in the Southern part of Turkish Thrace. Hoca Çeşme lies on a natural rise overlooking the delta of the Meriç. It measures about 80 x 70 m. In prehistoric times, a deep gulf existed in this area and the Meriç River flowed into this gulf some 50 km further to the North (Göçmen 1976). Hoca Çeşme may be settled right after the coastal morphological changes discussed above (see chapter I). A study of the geomorphological features of the region indicates that the connection of this gulf to the Aegean was only through a narrow outlet, only 5 km West of Hoca Çeşme at Enez, which also provided a sheltered harbour (Özdoğan 1998b: 437).

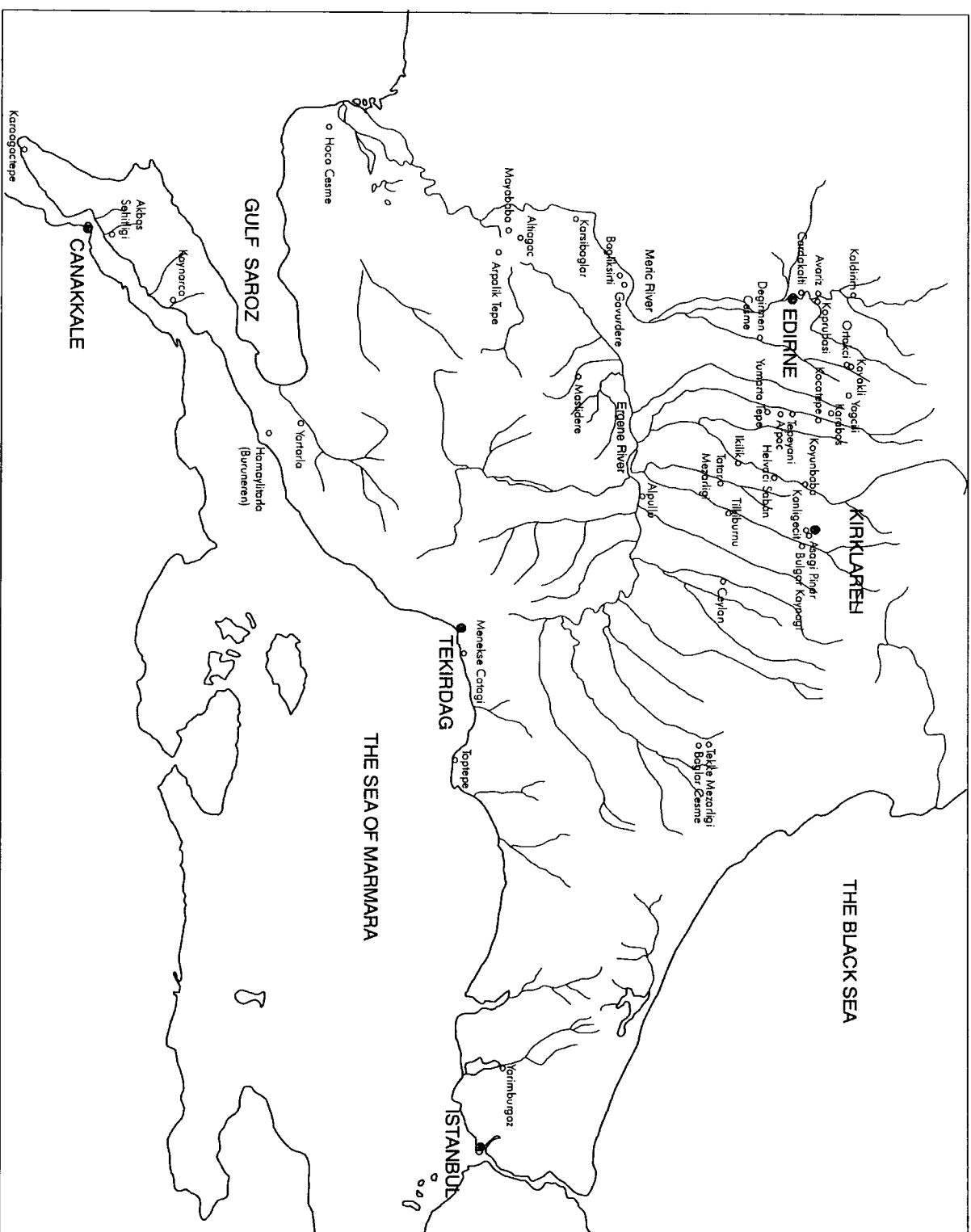


Fig.III.1. Neolithic and Chalcolithic Settlements in Turkish Thrace.

Hamaylitarla is situated on well-watered lowlands at the Southern foot of a rocky hill of Sarikayalar, ca. 500-600 m from the Sea of Marmara. It measures about 120 x 120 m. The Kazanağzi stream and a number of small seasonal streams run into the Sea of Marmara, constituting flat, fertile cultivated land. The Early Neolithic site of Hamaylitarla is associated with a stone axe factory. Kaynarca is a small site on a slope above the Münipbey stream in the Gelibolu Peninsula. It covers about 100 square meters. All early Neolithic settlements were found near springs.

The early pottery horizons of Yarimburgaz Cave in the Istanbul region are dated to the Early Neolithic Fikirtepe Culture. In the Ergene basin, Early Neolithic occupation was found only in the excavations of Aşağı Pinar, just South of the town of Kırklareli. A handful of early Neolithic pottery was also found in Bulgar Kaynağı, Altiagaç and Maya Baba. According to Özdoğan, alluvial deposits probably cover the early occupations of the settlements in the Ergene basin (Özdoğan 1989: 204).

The Middle and Late Neolithic periods of Turkish Thrace were marked by an increase in the number of the settlements compared to the Early Neolithic. A total of 33 sites³ were recorded (Harmankaya et al. 1998). Only a little information about settlements is available, so explaining settlement patterns is difficult. However, our intensive work in the Edirne region indicate that four topographical locations for the Middle and Late Neolithic settlements can be distinguished - riverside, streamside, hillslope and upland (Fig.III.2). A high percentage of sites were located on river and stream terraces and most of the sites were found near springs.

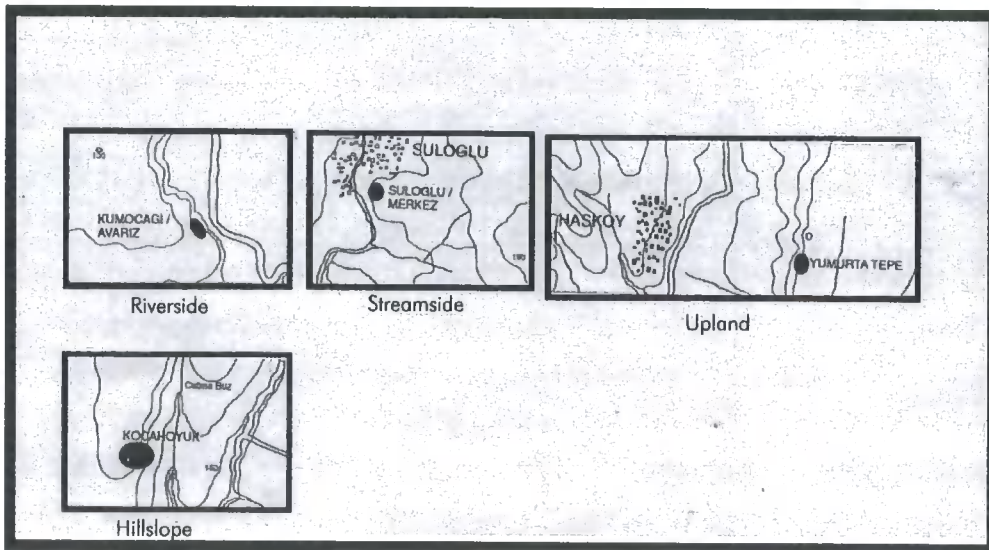


Fig.III.2. Topographical variation of Prehistoric settlements in the Edirne region.

³ There is no detailed publication of the Istanbul University survey. We do not know how many Neolithic and Chalcolithic sites exist in Turkish Thrace. According to Özdoğan, a total of about 300 prehistoric sites (from Palaeolithic to Early Iron Age) was found in Turkish Thrace (Özdoğan 1999a). However, only 25 the Neolithic and Chalcolithic sites appear in the literature, and 18 of them were new find sites.

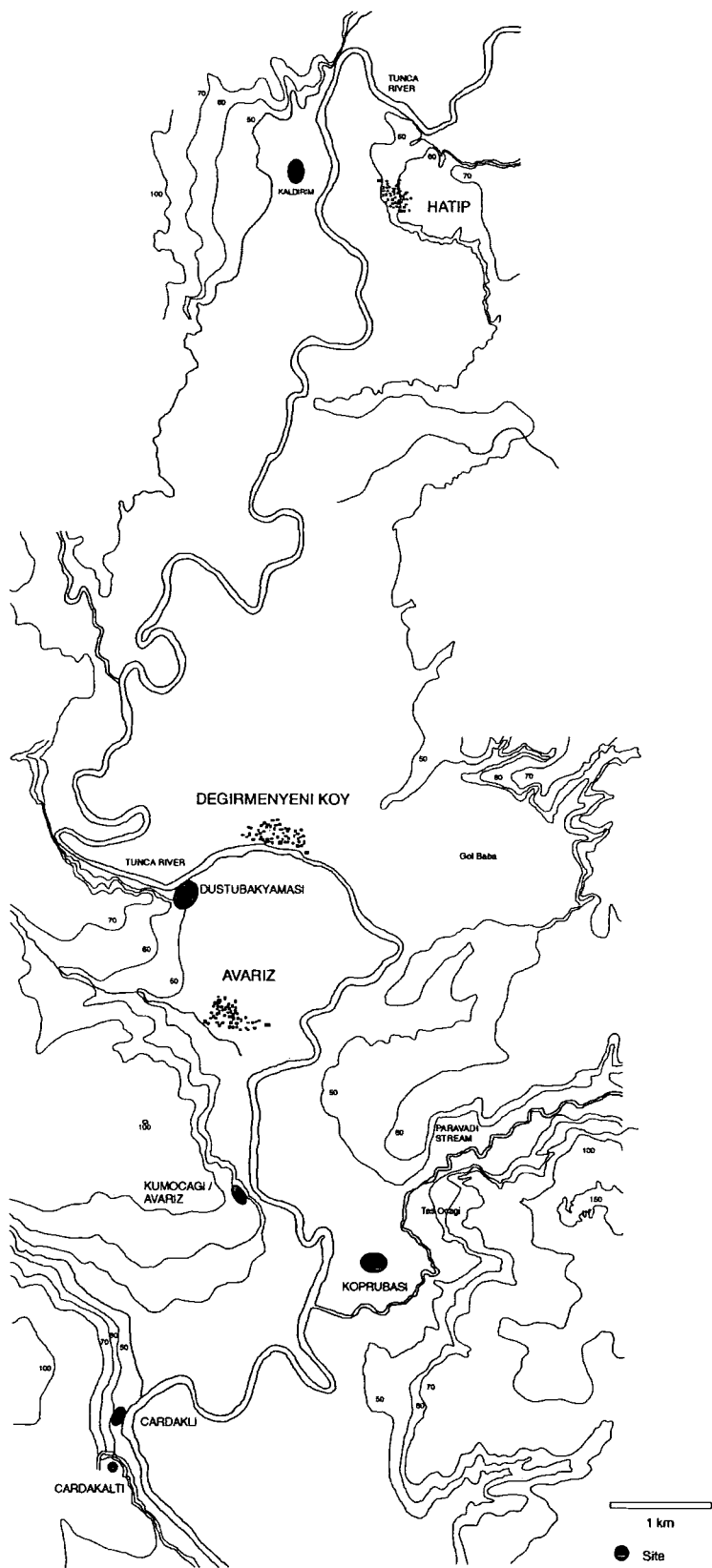


Fig.III.3. Prehistoric settlements in the Tunca basin. (Scale of map: 1:25,000).

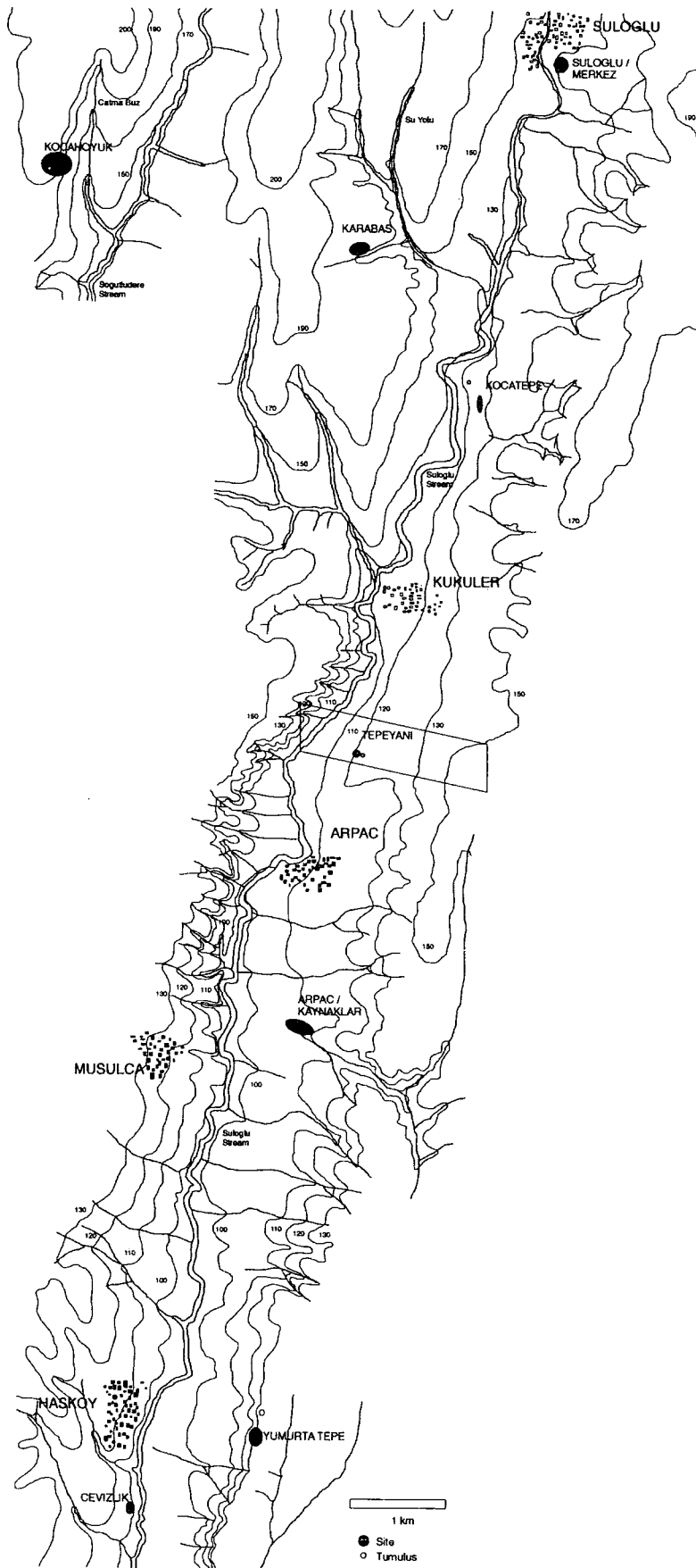


Fig.III.4. Prehistoric settlements in the Süloğlu basin. (Scale of map: 1:25,000). The box indicates area of intensive transect survey.

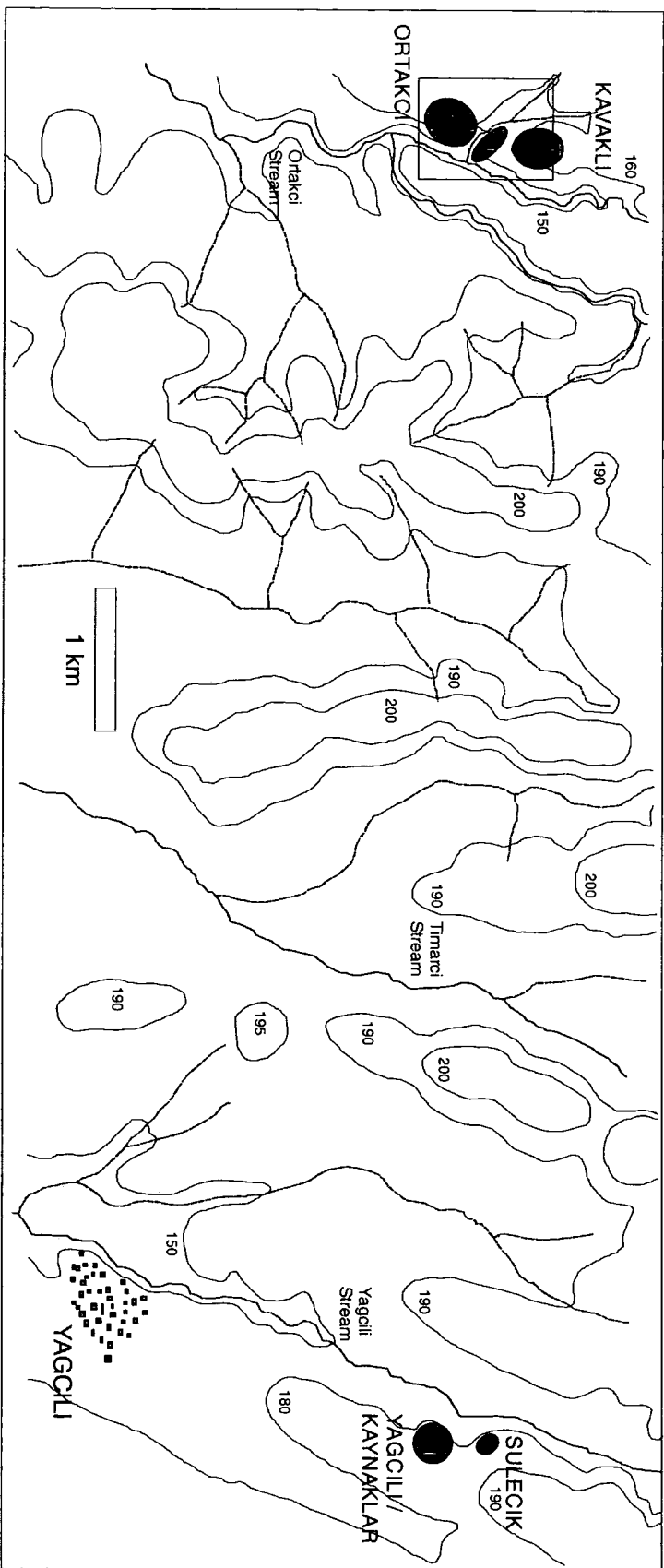


Fig. III.5. Prehistoric settlements in the Southern foothills of the Istranca Mountains (Scale of map: 1:25,000). The box indicates area of intensive block survey.

There is no evidence of Middle Neolithic settlements on the Northern shore of the Sea of Marmara and the Gelibolu Peninsula, except at the cave site of Yarimburgaz. This can be explained by coastal morphological changes in this area. During the Early Neolithic period, the Sea of Marmara and the Black Sea were freshwater lakes with considerably lower water levels than today. The first intrusion of warm and saline waters from the Aegean to the Sea of Marmara took place ca. sixth millennium cal. BC. to be soon followed by the establishment of a link with the Black Sea, that lasted until the sea level was 3 to 5 m higher than today. When the natural environment of the region changed, settlers moved and the coastal areas were deserted for almost a millennium. The Northern shore of the Sea of Marmara, deserted during the Middle Neolithic period, was settled by Late Neolithic groups. The Late Neolithic is represented by the Toptepe culture in this region. Toptepe pottery was found in the basal layers of Toptepe and Menekşe Çatağı. These sites are located on small promontories by the mouth of small streams, near to natural water sources.

During the Chalcolithic period, there was evidently a marked decrease in the number of settlements compared with the preceding the Neolithic period (Özdoğan 1998a). A total of 16 sites were recorded in the upper Ergene basin (Harmankaya et al. 1998). In the Balkans, this period is marked by large settlements with developed plan and cemeteries with rich grave goods, notably copper and gold. In Turkish Thrace, the settlements were small and low relative to those of other Chalcolithic cultures in the Balkans. Another important point is that not all of the settlements occupied during the earlier phases were settled during this period.

The Early Bronze Age of Turkish Thrace is marked by an increase in the number of settlements. A total of 57 Early Bronze Age sites were noted in Turkish Thrace (Harmankaya et al. 2001). It is characterized by two different zones; the littoral (the Gelibolu Peninsula and the Northern shore of the Sea of Marmara) and the interior (the Ergene basin). The interior is marked by flat settlements rather than tells. The Early Bronze Age tells occur mostly in the littoral zone. Keşan-Mezarlık Tepe and Ipsala-Arpalık Tepe are the only Early Bronze Age settlements known from the interior. There are also cultural differences between the interior and the littoral zones. The Early Bronze Age tells in the littoral area are related to the Bronze Age sequences of Kumtepe Ib-Troy in Western Anatolia.

III. E.1. Settlement pattern in the Edirne region

The Edirne region is the only area that has been intensively investigated in Turkish Thrace. From the Ergene Northwards, the principal overland road from the Istanbul region and the Straits follow the Eastern bank of the Ergene as far as the Edirne region. The Meriç

and Tunca valleys provide the most accessible general route into central Thrace and further into Southeast Europe. In the Edirne region, three different areas were investigated, geographically well defined as the basins of Tunca and Süloğlu and the area along the Southern fringes of the Istranca Mountains, as mentioned above (Fig.III.3-6). In prehistoric times, the Meriç (Maritsa) was probably of considerable importance as a trade route. The earliest settlements found in the Edirne region is the Balkan Middle Neolithic (Karanovo III) period. There is no evidence for early Neolithic settlements.

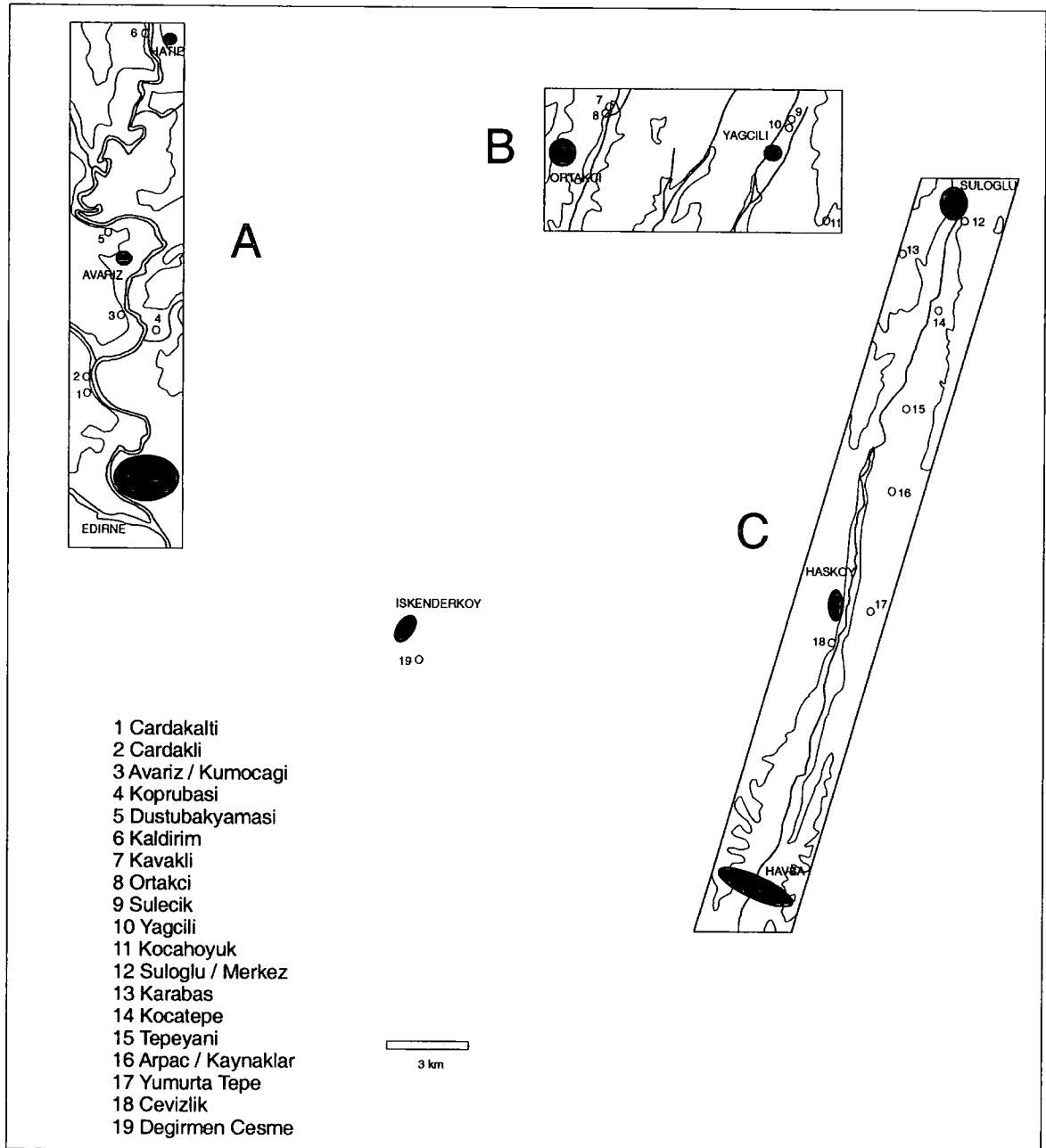


Fig.III.6. Distribution of Prehistoric settlements in the Edirne region. A. The Tunca Basin.

B. The area along southern fringes of the Istranca Mountains. C. The Süloğlu Basin

Settlement Phase I. The Middle Neolithic (Karanovo III) and The Late Neolithic (Karanovo III - IV) : Karanovo III and III - IV assemblage are represented at three sites - Köprübaşı and Kaldırım in the Tunca basin and Yağcili in the area along the southern fringes of the Istranca Mountains (Fig.III.7. A). Although a handful of Karanovo III pottery was represented in early surveys at the sites of Tepeyani and Kocahöyük, it was absent in the 2000 survey collections.

In the Edirne region, three principal topographical locations for phase I settlement can be distinguished - riverside, streamside and hillslope. In the Tunca basin, phase I sites are located on the lower terrace of the river, some 10-30 m above the flood plain. In the Edirne region, some streams, like the Süloğlu, contain flood-plain, low and high terraces and uplands. On the other hand, streams like the upper Iskenderköy and Oğulpaşa contain a very narrow flood-plain and a slope above it. Phase I settlement of Yağcili is situated on a slope above the Yağcili stream, a tributary of the Oğulpaşa stream. Kocahöyük is the only hillslope site in the Edirne region, which is about 180-200 m above sea level.

The size of Yağcili is 62.500 square meters, while the size of a Karanovo III settlement in Köprübaşı is 35.000 square meters. There has been no intensive work in Kaldırım. However, we have estimated it roughly at 35-40.000 square meters.

Settlement Phase II. The Late Neolithic (Kalojanovec-Çardakalti): A total of six Kalojanovec-Çardakalti settlements are represented - Çardakalti, Köprübaşı, Kumocagi / Avariz, Değirmençeşme, Ortakçi and Yağcili (Fig.III.7. B). In Ortakçi and Yağcili, only Kalojanovec type pottery was found. Çardakalti is the only excavated site in the Tunca basin (Kansu 1963). It shows only a single cultural phase, which contains Kalojanovec material with some local variations.

Two principal topographical locations for Phase II settlement can be distinguished - riverside and streamside. This phase displays a major change in the location of the settlements in the Tunca basin. In comparison with the Karanovo III and III - IV settlements, there was a tendency to locate settlements more frequently on the upper river terraces, some 60-80 m above the flood plain. Only one early site - Köprübaşı - was also settled during this phase. In Köprübaşı, Karanovo III and Kalojanovec / Çardakalti settlements were found side by side.

Phase II settlement of Yağcili and Değirmençeşme are situated on a slope above the Yağcili and Iskenderköy streams. Both are situated on settlements previously occupied during Karanovo III and III - IV periods. In Ortakçi, only three Kalojanovec sherds were found. There is no evidence for Kalojanovec / Çardakalti settlements in the Süloğlu basin.

The size of Phase II settlements show a range from 35.000 square meters to 62.500 square meters.

Settlement Phase III. The Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) and Karanovo VI): Pre-Cucuteni / Maritsa (= Kocatepe) assemblages are represented at six sites - Kavakli 2, Karabaş, Kocatepe, Tepeyani, Arpaç / Kaynaklar and Yumurta Tepe (Fig.III.7. C). A total of four Karanovo VI settlements is represented - Kavakli 1, Karabaş, Tepeyani and Yumurta Tepe. There is no evidence for Phase III settlements in the Tunca basin. The majority of Phase III settlements were found in the Süloğlu basin. Generally speaking, settlements occupied during earlier phases were not settled during this phase.

Two principal topographical locations for Phase III settlement can be distinguished - streamside and upland. Most of the settlements in the Süloğlu basin are situated on lower terraces, some 100-120 m above the flood plain. These settings would have provided access to fertile flood-plain soils, suitable for agriculture. Two settlements - Yumurta Tepe and Karabaş - are located in upland areas. Yumurta Tepe is located on the edge of upland, some 130 m above the flood plain. Karabaş lies close a secondary stream, some 175 m above the flood plain. These settings would have provided access to both fertile flood-plain soils along upland streams and upland soils. Kavakli 1 and 2 are situated on lowland of Ortakçi stream, about 150-160 m above the flood plain. Kavakli 2 is the largest site, about 62.500 square meters. Tepeyani is the smallest site, at about 4.800 square meters.

Karanovo VI settlements have the smallest size range compared with the Neolithic and the Early Bronze Age. The largest site is Kavakli 1, about 45.000 square meters in size, and again Tepeyani is the smallest Karanovo VI site.

Settlement Phase IV. The Early Bronze Age: During the Early Bronze Age, there was an increase in the number of settlements in the region of Edirne. A total of seven EBA sites are represented- Çardakli, Düşübakyamasi, Kaldirim, Ortakçi, Kocahöyük, Sülecik and Süloğlu / Merkez (Fig.III.7. D). In Karabaş, Arpaç and Cevizlik, only small quantities of EBA sherds were found. Three principal topographical locations for phase IV settlement can be distinguished - riverside, stream side and hillslope. In the Tunca basin, with the exception of one site - Kaldirim - the settlements occupied during the earlier periods were not settled during this phase. The settlements in the Tunca basin are situated on the upper and lower river terraces. In the Süloğlu basin, only one Early Bronze Age settlement was found. It is situated on the first terrace of the Süloğlu Stream, 150 m above the flood plain. The first terrace rises vertically from the stream, creating a natural defence. A handful of Early Bronze Age pottery was found in Karabaş, Arpaç and Cevizlik in the Süloğlu basin.

The Early Bronze Age settlements on the Iskenderköy and Oğulpaşa streams are situated on a slope above the streams. Kocahöyük is the only hillslope site in the Edirne region, which is about 180-200 m above sea level.

In the Edirne region, there are large and small Early Bronze Age settlements, associated with each other. The largest settlement is Düşübakyamasi, about 75.000 square

meters in size. The smallest Early Bronze Age settlement covers an area of ca. 30.000-35.000 square meters.

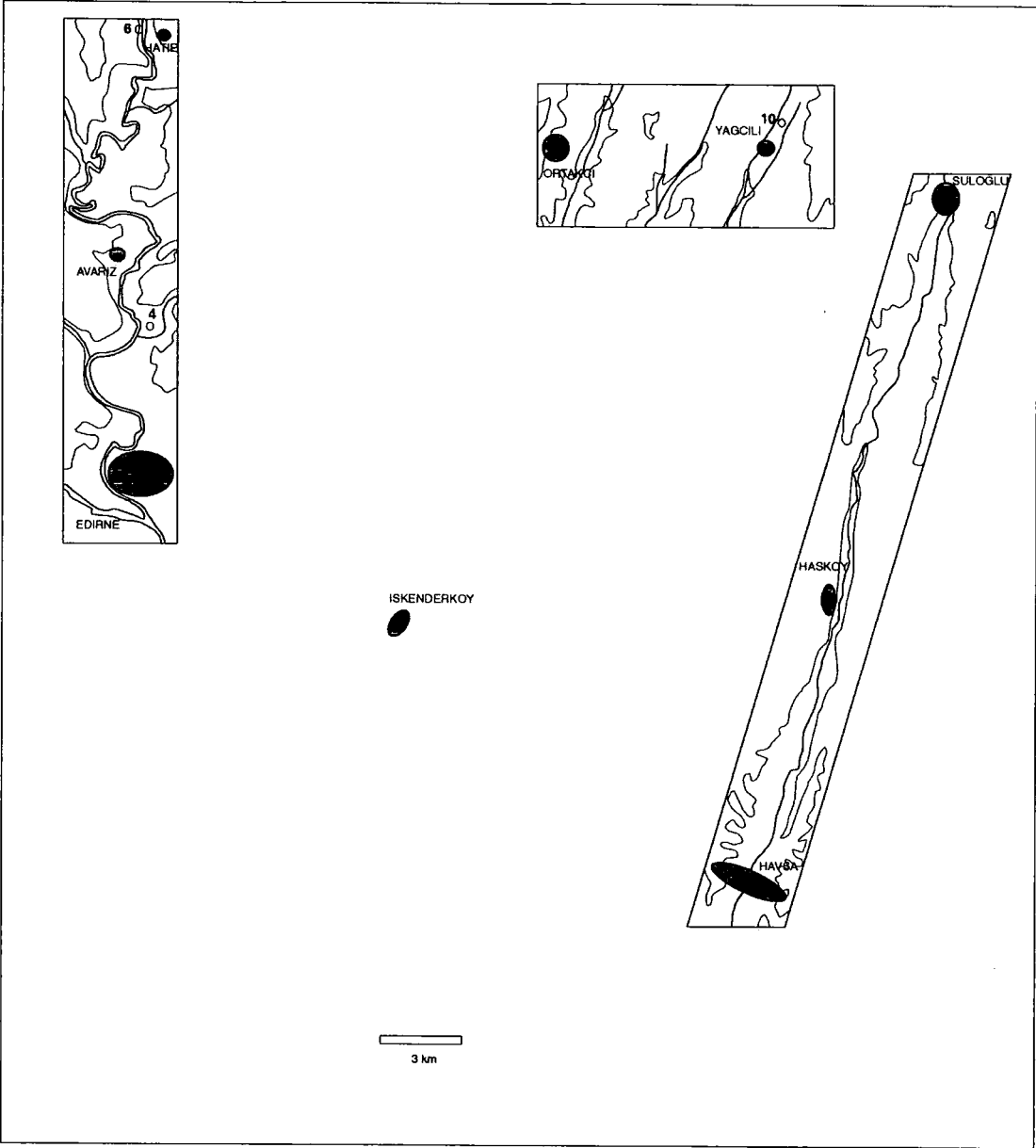
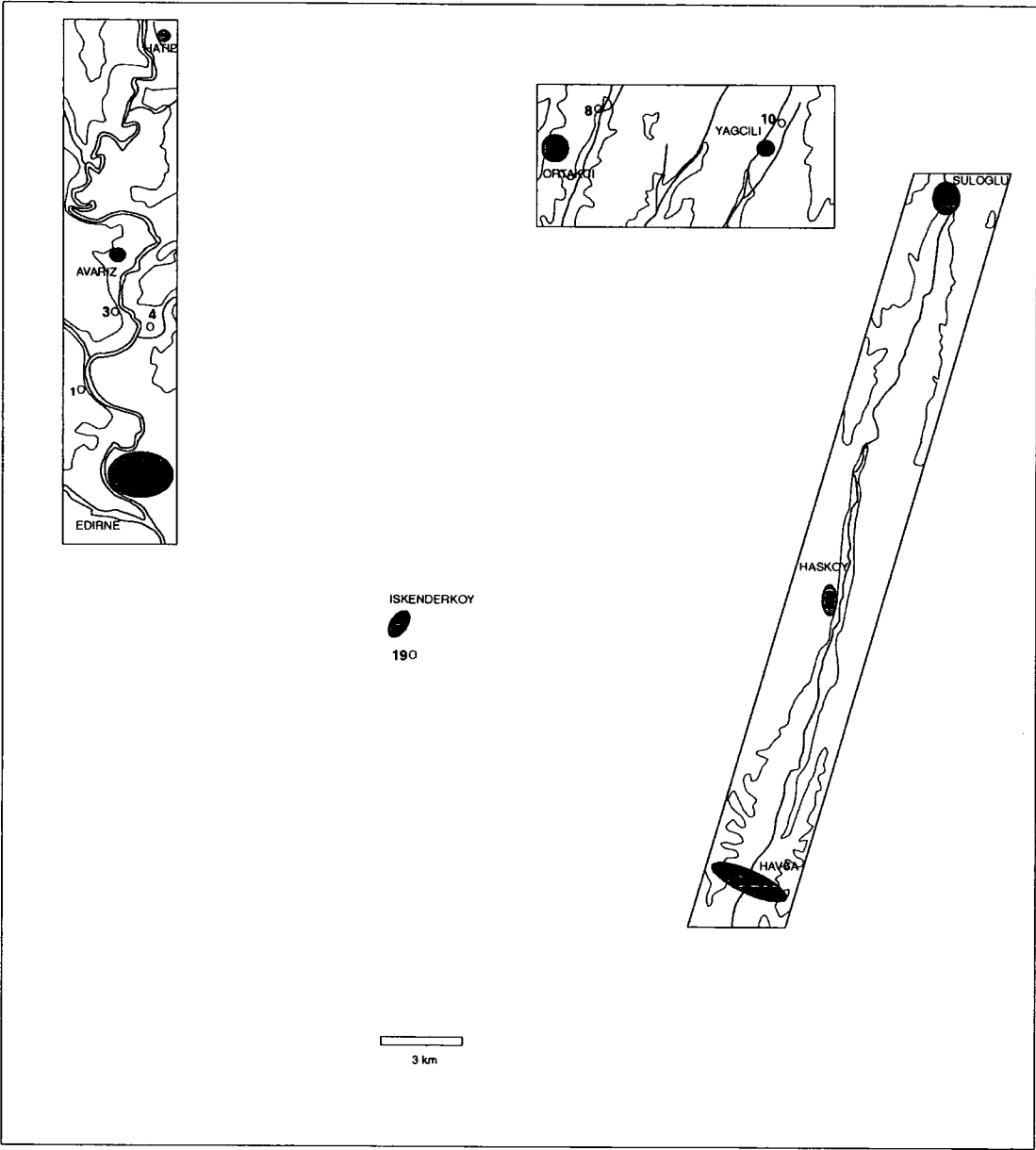
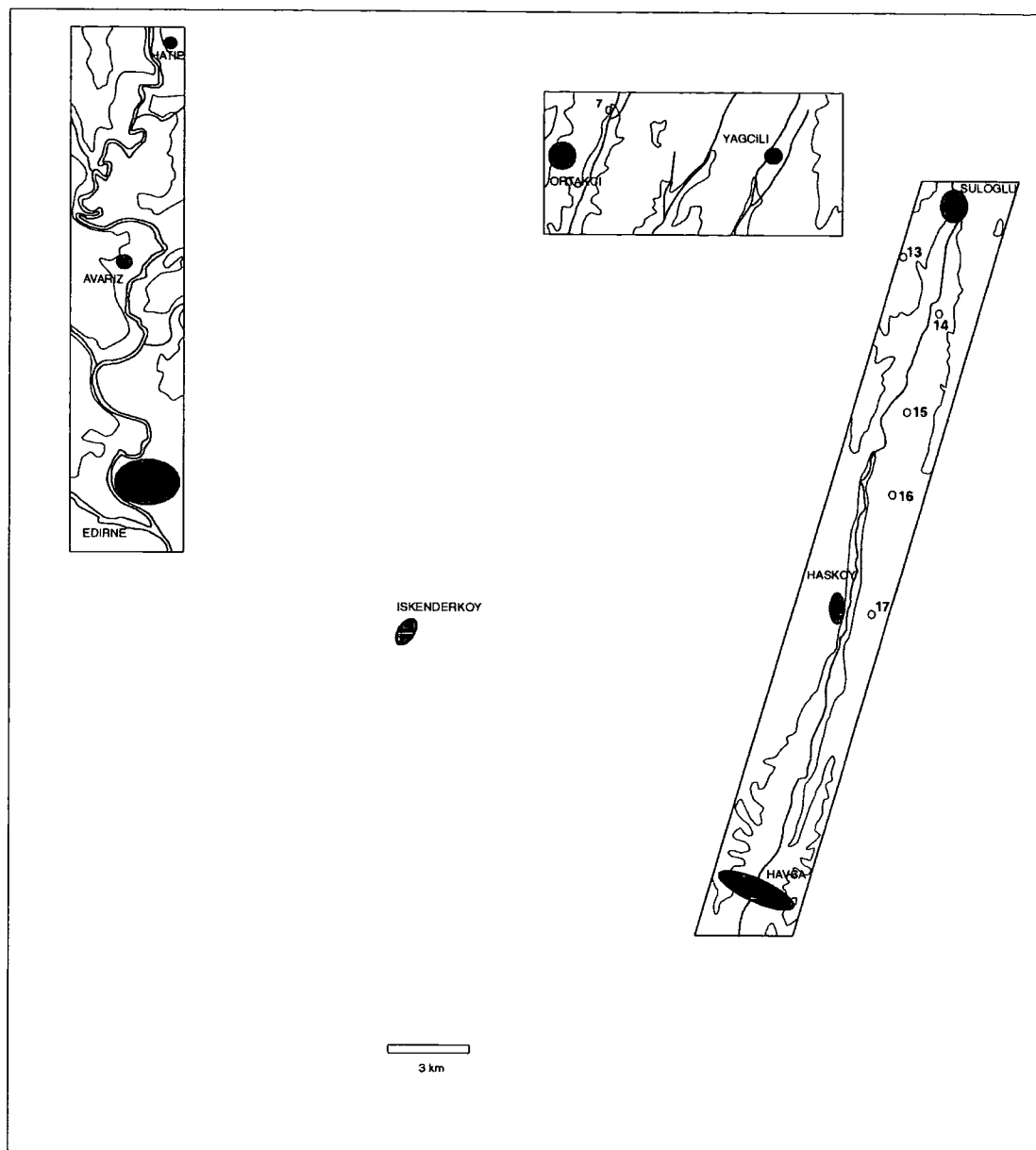


Fig.III.7. Prehistoric settlements in the Edirne region by period.

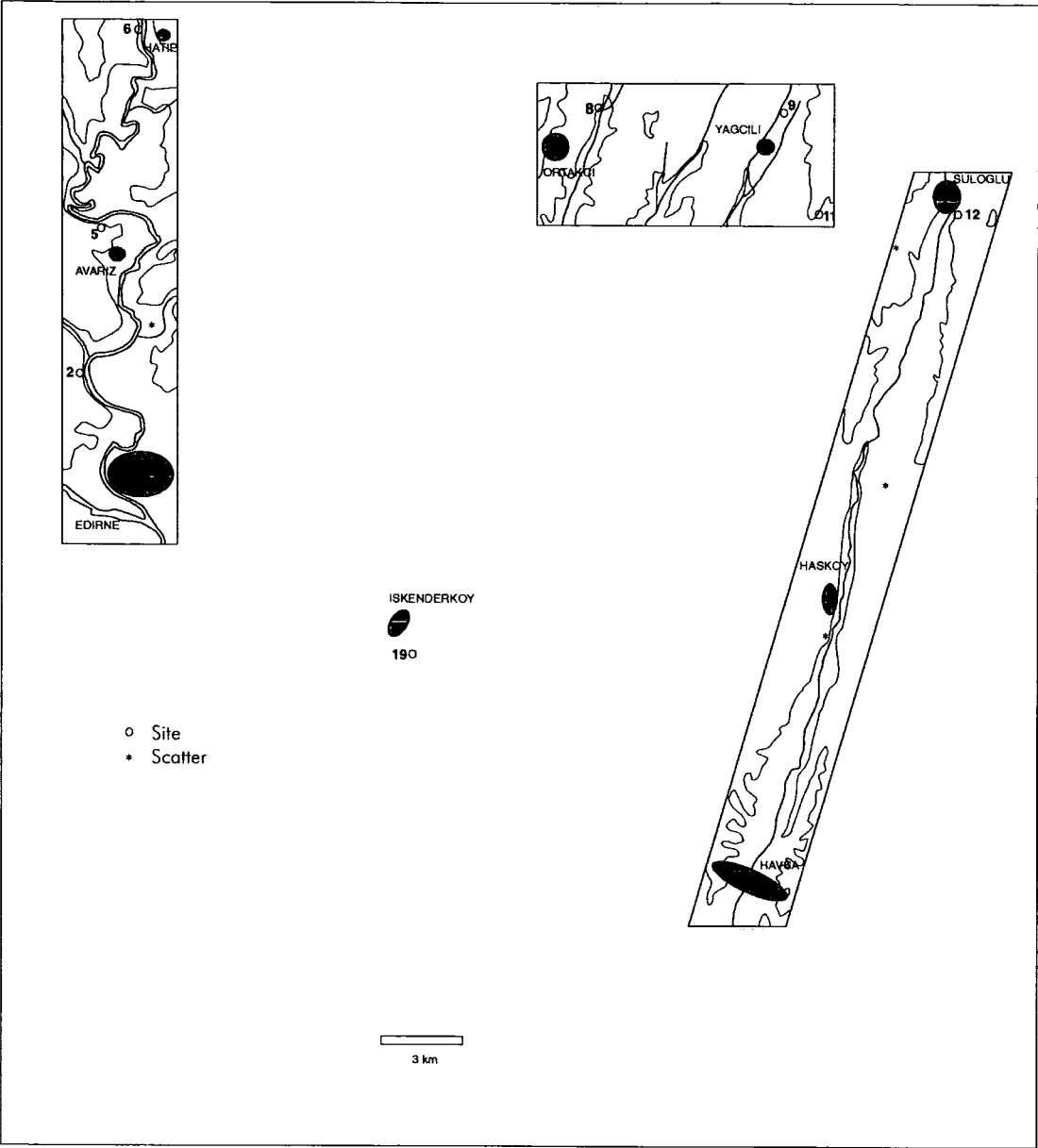
A. Middle Neolithic (Karanovo III) and Late Neolithic (Karanovo III-IV) Settlements.



B. Late Neolithic (Kalojanovec-Çardakalti) Settlements

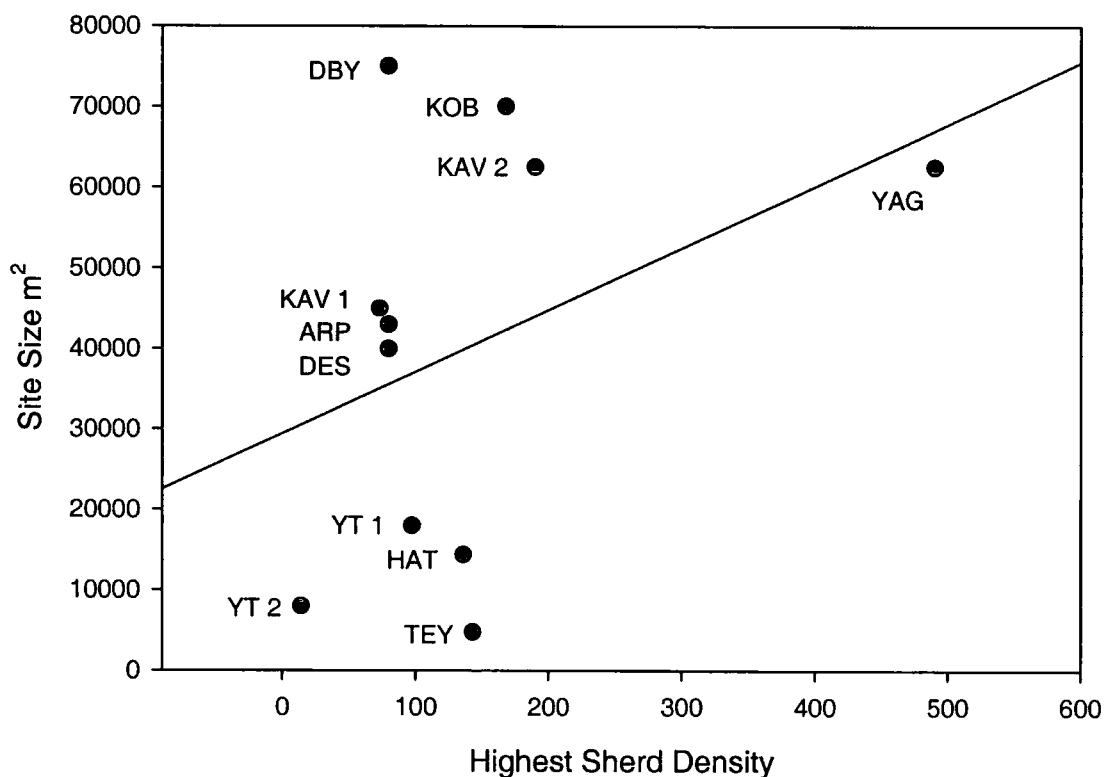


C. Chalcolithic Settlements



D. Early Bronze Age Settlements

Intra-site gridded collections in the Edirne region have given us information on site sizes. The relationship between site size and maximum sherd density is seen in Fig.III.8.



Sites and Periods

HAT= Hamaylilarla : Early Neolithic
KOB= Koprubasi : Middle and Late Neolithic
YAG= Yagcili / Kaynaklar : Late Neolithic
DES= Degirmen Cesme : Late Neolithic
KAV= Kavakli : Chalcolithic
ARP= Arpac : Chalcolithic
TEY= Tepeyani : Chalcolithic
YT= Yumurta Tepe : Chalcolithic
DBY= Dustubakyamasi : EBA

Fig.III.8. Site size vs. highest sherd density in settlements of the Edirne region.

A comparison of site sizes for the Middle and Late Neolithic settlements and the Early Neolithic and Chalcolithic settlements suggests that, in general, Middle and Late Neolithic settlements are larger than the Early Neolithic and Chalcolithic settlements. Chalcolithic settlements, especially those of the Late Chalcolithic, have been limited to a



few hundred square meters (cf. Yumurta Tepe and Tepeyani). The Pre-Cucuteni / Maritsa (= Kocatepe) settlement of Kavakli 2 is the only large Chalcolithic settlement (60.000 sq. meters). During the Early Bronze Age, very large settlements appear (cf. Düşübakymasi and Kocahöyük). According to Fig.III.8, the highest sherd densities lie between 90 to 200 sherds per 10x10 m quadrat. Only one site -Yağcili - has a very high sherd density of ca. 500 sherds per 10x10 m quadrat. It seems that there were no major differences in maximum sherd densities between Neolithic, Chalcolithic and Early Bronze Age settlements in the Edirne region. In Fig.III.8, three different concentrations can be seen. The first concentration consists of small sites, smaller than 20.000 sq. meters. Among these sites, Yumurta Tepe and Tepeyani show a single-focus concentration pattern, while Hamaylitarla has a multiple-focus concentration pattern. The second concentration consists of sites cover an area ca. 40.000 sq meters. Three sites - Kavakli 1, Arpaç and Değirmençeşme - show almost similar sherd densities. Arpaç and Değirmençeşme show a single-focus concentration pattern, while Kavakli 1 has a multiple-focus concentration pattern. On the other hand, in Değirmençeşme poor surface visibility prevented us from defining the actual limits of the surface finds. The third concentration consists of large settlements - Köprübaşı, Düşübakymasi and Kavakli 2. As I mentioned earlier, there are chronological differences between these sites. Among them only Kavakli 2 shows a multiple-focus concentration pattern. In Köprübaşı, the Middle and Late Neolithic settlements overlap, making definition of the actual limits of settlements difficult. Thus, Köprübaşı is definitely much smaller. Fig.III.8 shows that Yağcili is a unique site - the only a large settlement with a high sherd density.

Occupation at the settlements of the Edirne region can be described as mobile. Different aspects of settlement mobility were outlined above. As a result of surface survey of the Edirne region, two models can be introduced for settlement mobility (Erdoğan 1999c). The first, I have called "Extensive Mobility". This model may explain the series of abandonments and re-occupation dispersed over one widespread landscape unit or community area such as a permanent stream, highland, coastline etc. The second model is "Restricted Mobility", explaining abandonments and re-occupations of settlements dispersed over small landscape units that are almost the same as those in the Extensive mobility. The size range of "Extensive Mobility" is larger than of "Restricted Mobility". In "Restricted Mobility", settlements are dispersed over not more than a circle of 1 km radius. However, in "Extensive Mobility", settlements are dispersed about a circle of 10-20 km radius in one community area (Fig.III.9).

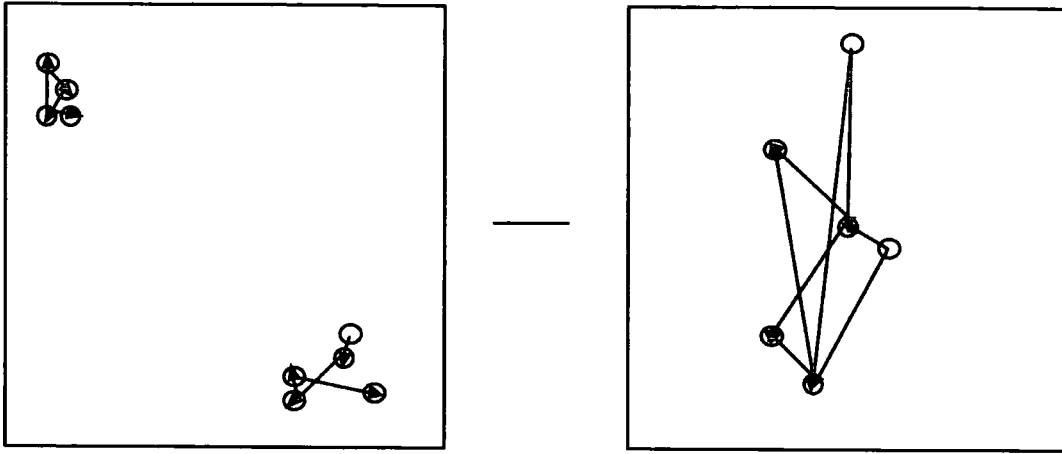


Fig.III.9. Models of “Restricted” mobility (left) and “Extensive” mobility (right).

Occupation at the settlements of the Edirne region was marked by a series of abandonments and re-occupations. The settlements are often situated on sites previously occupied during the earlier periods. However, later arrivals (?) settled not on the top of the early settlements, but always nearby. This pattern fits our “Restricted Mobility” model. Noteworthy among this model is the Kavakli-Ortakçi area, some 20 km Northeast of Edirne. In the Kavakli-Ortakçi area, settlement history dates back to the Late Neolithic period. The abandonments and re-occupation of settlements from the Late Neolithic to the Iron Age are dispersed over a small (1x1 km.) area (see above chapter II). The Restricted mobility model of the Edirne region is comparable to those of Aşağı Pinar-Kanlıgeçit, near the town of Kırklareli, around 40 km east of Edirne (Özdoğan et al. 1997:3), and Drama in Southern Bulgaria, some 60 km Northwest of Edirne (Fol et al. 1989:81). In Aşağı Pinar-Kanlıgeçit, settlement history dates back to the Early Neolithic period. At Aşağı Pinar, Karanovo I-II and Karanovo III and III-IV settlements were found almost side-by-side. Chalcolithic (Pre-Cucuteni) settlement was found in the South and East Kanlıgeçit area, about 300 m South-West of Aşağı Pinar, southern part of the Haydardere stream. The Early Bronze Age settlements were found in the North and South Kanlıgeçit area, both side of the Haydardere stream. A small settlement of the Late Bronze / Early Iron Age was found in Yesilmeydan hill, about 300 m East of Kanlıgeçit and 200 m South of Aşağı Pinar (Fig.III.10).

In the Drama micro-region settlement history dates back also to the Early Neolithic period (Fig.III.10). Karanovo II and III settlements were found ca. 1,5 km Southeast of Drama, on the South bank of the Kalnica Stream. Karanovo IV settlement was moved to the South of Drama, ca. 1,5 km West of Karanovo II and III settlements. The late Karanovo IV and Karanovo V and IV settlements were found just East of Karanovo II and III settlements. Early Bronze Age settlements were found on both Karanovo V-VI and Karanovo IV settlements (Lichardus et al. 2000).

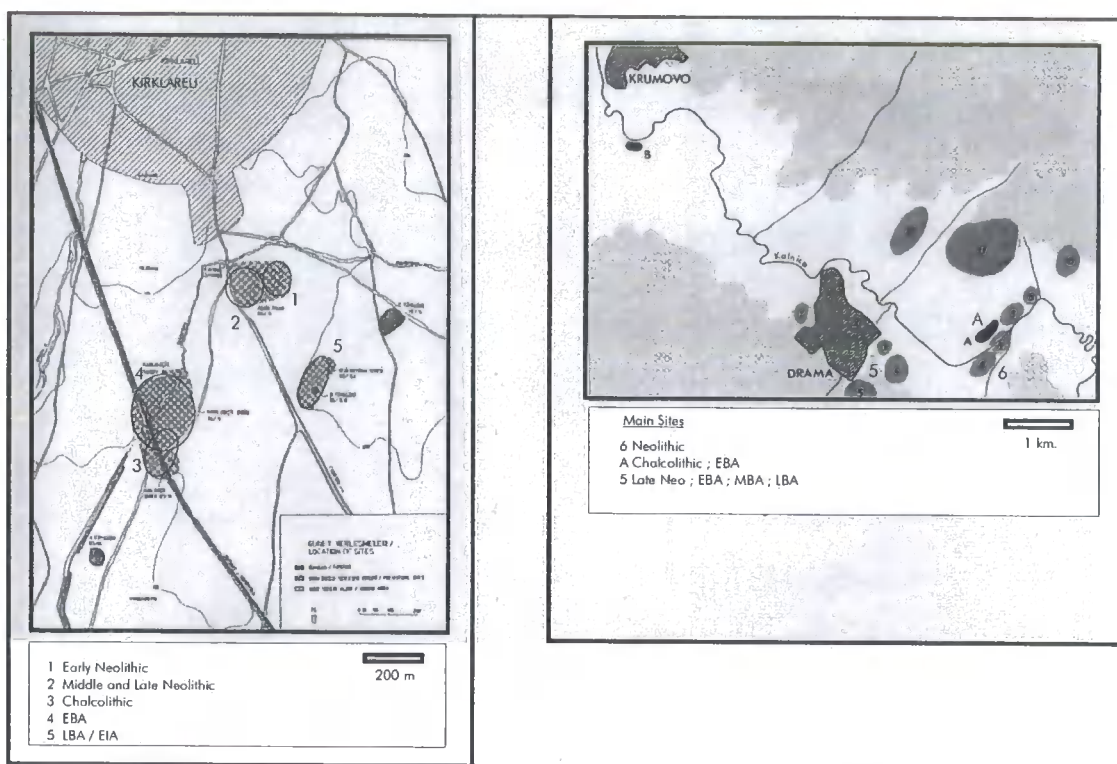


Fig.III.10. Location map of prehistoric settlements in the Kirkclareli and the Drama regions.

Settlement mobility in the Tunca basin is significantly different, and it can serve as an example of our “Extensive Mobility” model. In the Tunca basin, Middle and Late Neolithic (Karanovo III and III-IV) settlements were found on the lower terrace of the river, some 10-30 m above the flood-plain. At the beginning of the Late Neolithic period, all settlements were abandoned and new settlements with Kalojanovec-Çardakalti assemblages are marked by a shift from lower terrace to upper terrace settlement, some 60-80 m above the flood-plain. There is no evidence of Chalcolithic settlements in the Tunca basin. During the Early Bronze Age, the settlements are situated on the lower and upper river terraces. With the exception of one site - Kaldirim - the settlements occupied during the earlier phases were not settled during the Early Bronze Age.

There are, as yet, no geomorphological studies, no detailed soil analyses and no pollen diagrams for Eastern Thrace. Hence, we can only speculate for the time being on what factors contributed to settlement change in the Edirne Region. It is not yet clear whether settlement change in the Edirne region was due to changes in landscape (soils or natural water sources), climatic changes or other social factors.

It is difficult to identify precise hierarchical relationships between settlements in the Edirne Region. However, the size of Pre-Cucuteni / Maritsa (= Kocatepe) settlements indicates that there are small settlements associated with large settlements. Kavakli 2 is the

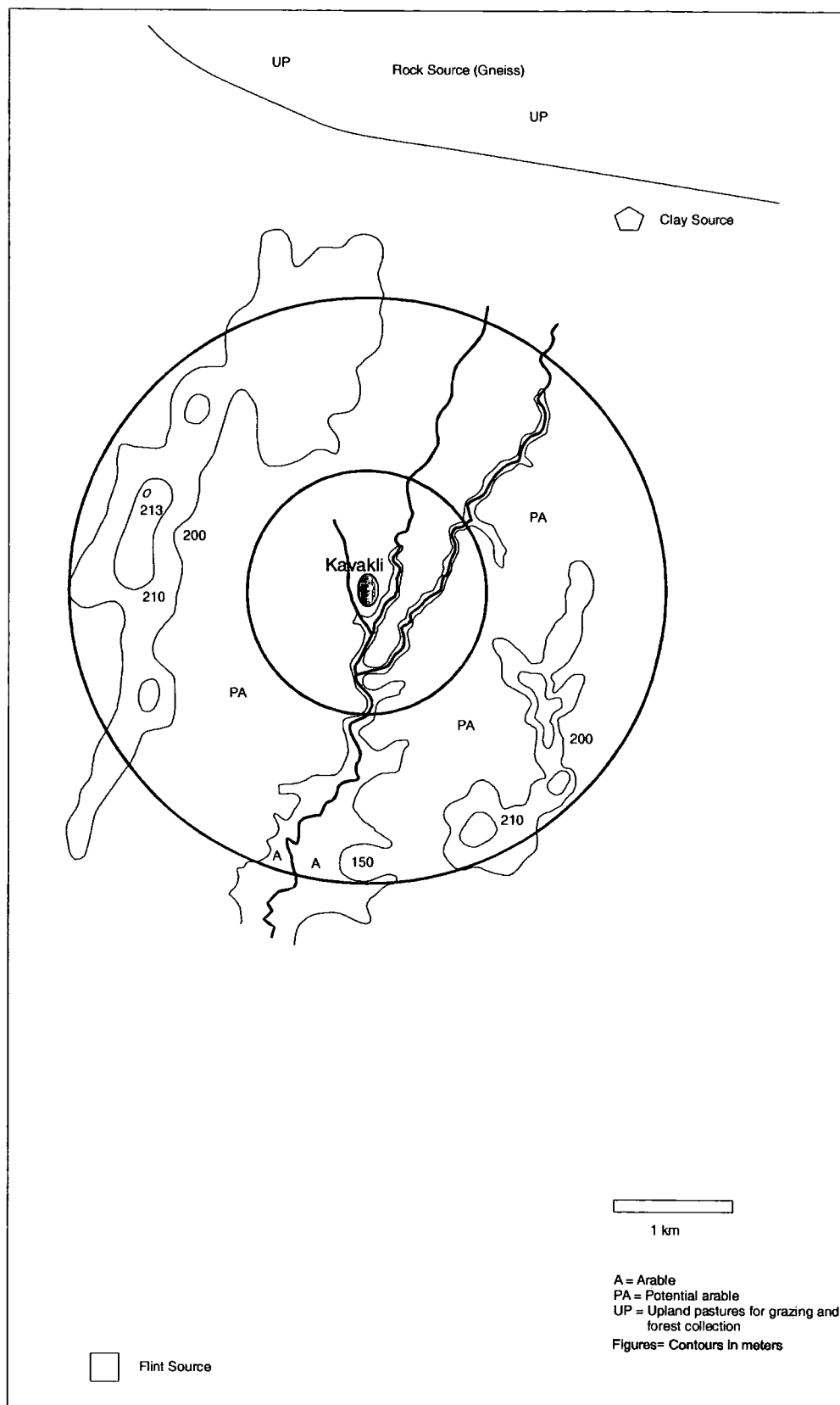


Fig.III.11. The catchment and exploitation territory of Kavakli 2.

largest Pre-Cucuteni / Maritsa site in the Edirne Region. It is located in the area at the edge of the Istranca Mountains. The Istranca Mountain contains copper, rock and wood sources and serves highland pastures for grazing. Flannery's catchment analysis may be used for Kavakli 2. Kavakli 2 needed a circle of mostly 2.5 km radius or a half-hour walk to satisfy the entire basic agricultural requirement. On the other hand, a catchment of more than 5 km radius, or one hour's walk, was required to satisfy the mineral resources requirements and also to provide highland pastures for grazing. A small flint source was available more than 5 km to the South and a rock source, mainly gneiss, and a clay source for making pottery was also available within 5 km radius (Fig.III.11).

The small Pre-Cucuteni / Maritsa (= Kocatepe) settlements are situated on stream terraces to the South. These settings would have provided access to fertile flood-plain soils, suitable for agriculture. They are located on linear streams. It seems that streams in the South are colonized by daughter settlements. They needed a circle of less than 2.5 km radius or half-hour walk to satisfy all of the basic agricultural requirements and to include some seasonal plants in the upland. We assume that colonisation of the streams with daughter settlements should be economic. There was probably a hierarchy between the small and large settlements. The small settlements may supply agricultural products to the big settlements, and the big settlements may supply them products such as flint and copper.

In the Edirne region, it seems that during the Early Bronze Age there were large centres acting as the cores of community areas. Flannery's work about determination of site catchments and territory analysis can be applicable in the Early Bronze Age settlements in the Tunca Valley. In the Tunca Valley, Early Bronze Age settlements were constrained by the linear character of the river. Three Early Bronze Age settlements - Düşübakyamasi, Kaldirim and Çardakli - were all found on the Western bank of the river. Düşübakyamasi is the largest settlement, about 75.000 sq. meters in size. It is situated on a high terrace, commanding fairly extensive cultivable lands. Kaldirim and Çardakli are situated on lower river terraces, and are ca. 40-50 sq. meters in size. The question is how much territory is required to feed the estimated population of the three settlements. It seems that Çardakli and Kaldirim are small hamlets of less than a 100 people, and they need small area of alluvial land. We assumed that each settlement used an area of 2.5 km radius, or half-hour walk. However, they needed a circle of less than 2.5 km radius to satisfy the entire basic agricultural requirement. Düşübakyamasi suggest a territory of 5 km radius, or one-hour walk. However it also needed a circle of about 2.5 km radius to satisfy the entire basic agricultural requirement. Theoretical territories were created using Thiessen polygons. The lines of Thiessen polygons have been suggested as running along geographical features such as hills which may have acted as boundaries (Fig.III.12). For settlement pattern analysis of the Tunca River, I would like to introduce a new model - the landscape model. There are two important factors for this model. The first is physical

relief. As Bintliff suggests, the map distance for walking-times of 2, 1.5 and 1 hour varied according to physical relief. On a completely flat plain without a major river crossing, one might walk as much as 7 km in an hour, whereas in very rugged hill country, one might walk as little as 2 to 3 km. Vegetation is also important. The second factor is topography. We assumed that topographic features such as hills and streams could be the border between settlements. According to Williams, the obvious boundaries are related to prominent land forms such as hills, mountains, cliffs, streams, rivers and watersheds. Other boundaries may be marked by changes in gradient on a slope on changes in vegetation or soil or rock types (Williams 1982: 141-143). We do not know the past vegetation along the Tunca River or the past dynamics of the river. However, when we look at Düştübakyamasi, the people living in the settlement need to cross a major river to the East and North, and they need to climb hills of 150-200 m altitude to the West. Only the Southern part is a relatively flat plain. To the East and West of the settlement, hills about 120-130 m runs from North to South, parallel to the river. Eski Tabya (157 m) to the East of the settlement is the important topographic feature. These hills probably constitute the Eastern and Western territories of the settlement. Yassitepe (100 m.) in the South probably constitute a border between Düştübakyamasi and Çardakli. The first meander of the river constitutes the North-Eastern territory of the settlement, and the Kışra Stream probably constitutes the North-Western territory of the settlement. Theoretical territories of settlements created using the landscape model can be seen in Fig.III.13.

III.F. CONCLUDING REMARKS

The settlement pattern of Turkish Thrace shows signs of differentiation at the regional level. Two different regional and cultural zones can be identified: 1. The Northern shore of the Sea of Marmara and the Gelibolu Peninsula. 2. The Ergene Basin. Although tell sites appear on the Northern shore of the Sea of Marmara and the Gelibolu Peninsula, only flat settlements were found in the inner part of Eastern Thrace. A tendency to nucleation has been detected through the Early Bronze Age in the Northern shore of the Sea of Marmara and the Gelibolu Peninsula. An unstable natural environment of Turkish Thrace affected the settlement pattern, especially in the coastal areas. The coastal areas were deserted for almost a millennium during the end of the Early and the Middle Neolithic period, because of a rapid change of the coastal morphology of the Sea of Marmara. The location of coastal tells during the Early Bronze Age suggests that most of tells were situated on small natural harbours which today lie under water (e.g. Toptepe) or an alluvial deposits (e.g. Selimpaşa). The location of the Early Bronze Age tells in the coastal areas should correlate with socio-economic developments. These Early Bronze Age tells are dated to Anatolian Kumtepe Ib-Troy horizon. During the Early Bronze Age, the

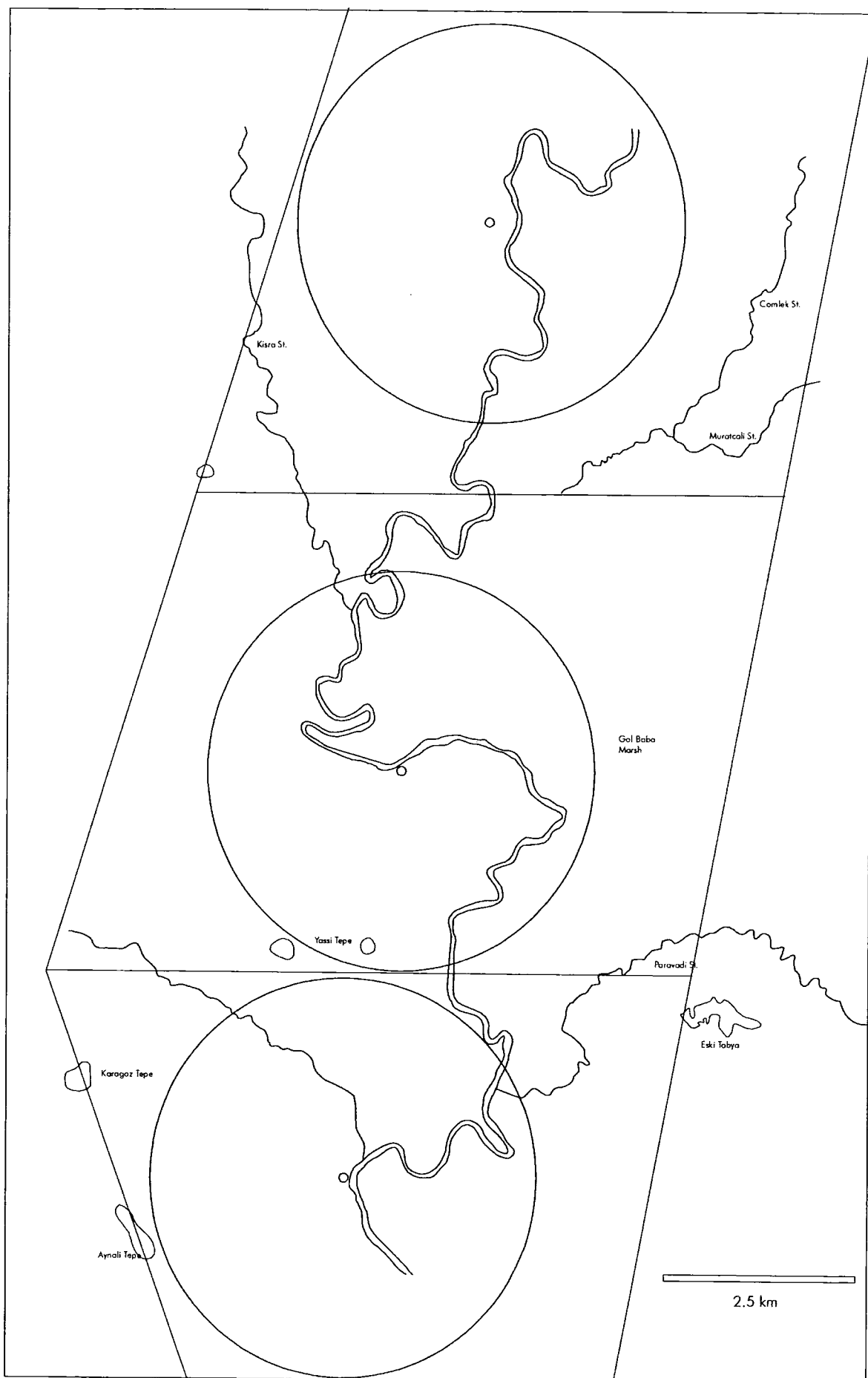


Fig.III.12. EBA settlements in Tunca basin. 2.5 km radius territories modified by use of Thiessen Polygons.

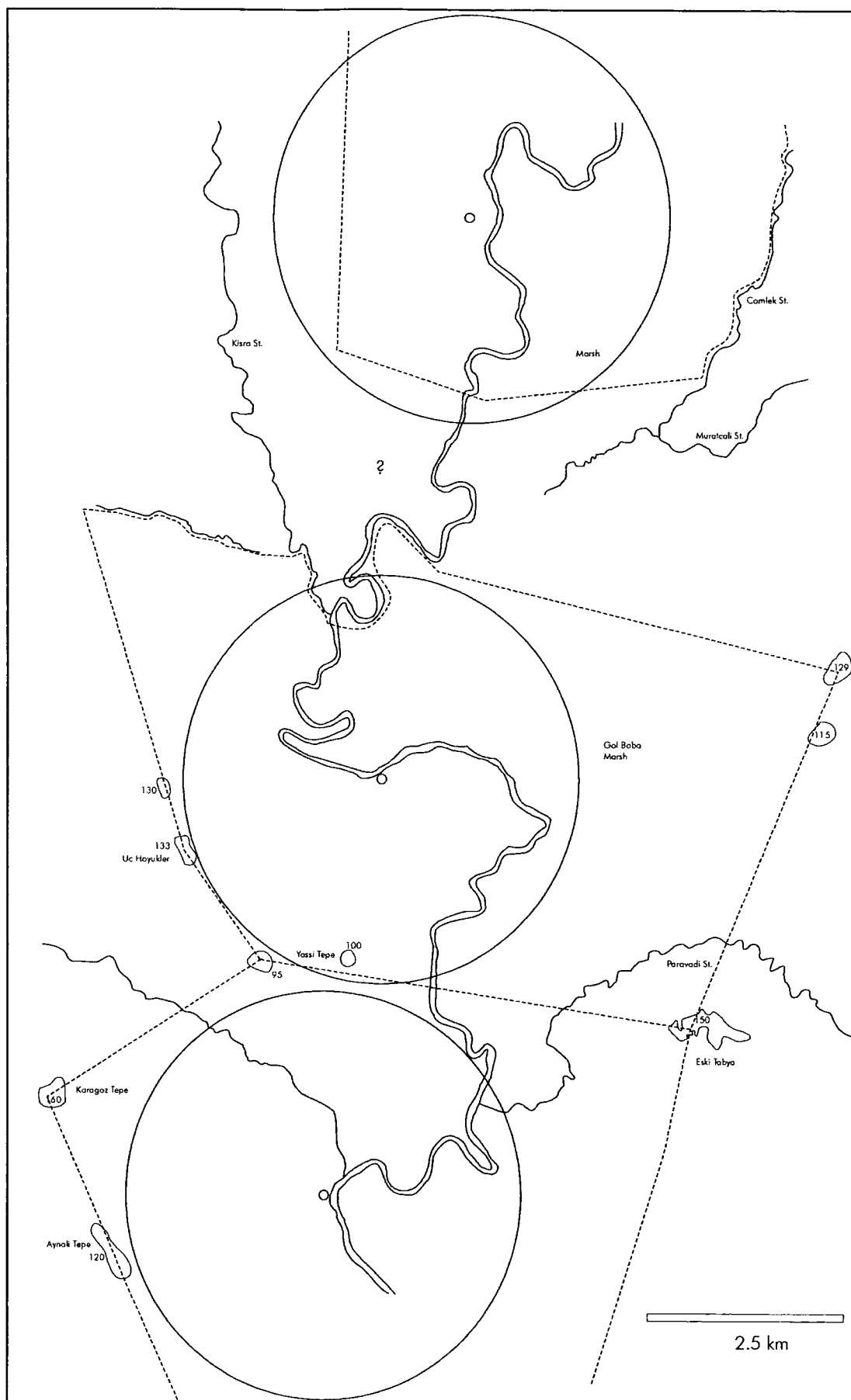


Fig.III.13. EBA settlements in Tunca basin. 2.5 km radius territories modified by using the Landscape model.

main change in social structure, such as planned settlements, is covered with a wider range of prestige goods in circulation in Anatolia (Harmankaya et al. 2001). It seems likely that socio-political evolution witnessed in Anatolia as well as in the Southern part of Turkish Thrace is the product of societies secure in the tradition of place and cultural identity which is symbolized by those very tells in which they resided.

In the Edirne region, Yağcılı is the largest Neolithic site. One of the key factors in the location of Karanovo III and III-IV settlements like Yağcılı and Aşağı Pinar is the presence within a few km of the Istranca Mountains with rich copper and rock sources. A large number of malachite beads were found in Aşağı Pinar during the Middle Neolithic period (Özdoğan 1999a: 20). One documented aspect of the network is the metabasite stone axes from the Şarköy region, which reached at least the Meriç and Ergene basins in the Neolithic periods. The Istranca Mountains also provided highland pastures for grazing.

Kavaklı 2 is the largest Chalcolithic site in the Edirne region. It is also located to the area along the southern fringes of the Istranca Mountains. All Pre-Cucuteni / Maritsa (= Kocatepe) settlements of Turkish Thrace are located in the upper Ergene basin. In Turkish Thrace, the apparent decrease of occupation dating to the Late Chalcolithic (Karanovo VI) is striking. Only 6 sites are known in the Ergene Basin (Erdoğan 1997). Kavaklı 1 is the largest known Karanovo VI settlement so far. However, artefact density is less than other known Karanovo VI settlements in the area.

The Early Bronze Age settlements in the Edirne region are characterised by flat settlements. Düşübakıyaması is the largest settlement in the Tunca basin while Kocahöyük is the largest settlement in the Süloğlu area.

There are as yet no full publications of Istanbul University's survey. Hence, without any knowledge of the site sizes and precise locations, it is difficult to identify social relationships between settlements. The Edirne region is the only area that has been intensively investigated in Turkish Thrace. In the Edirne region, Pre-Cucuteni / Maritsa (= Kocatepe) settlements shows a hierarchical relationship. The small stream terrace settlements are associated with the large settlements. Settlements in the Tunca River indicate that, during the Early Bronze Age, there were large centres acting as cores of community areas distanced a few km apart.

Intra-site gridded collection survey in the Edirne region, which I discussed in the chapter II, gives us information on site sizes. The relationships between site size and highest sherd density are seen in Fig.III.8. A comparison of site sizes for the Middle and Late Neolithic settlements and the Early Neolithic and Chalcolithic settlements suggest that, in general, Middle and Late Neolithic settlements are larger than the Early Neolithic and Chalcolithic settlements. Chalcolithic settlements, especially those of the Late Chalcolithic, have been limited to a few hundred square meters (cf. Yumarta Tepe and Tepeyani). The Pre-Cucuteni / Maritsa (= Kocatepe) settlement of Kavaklı 2 is the only

large Chalcolithic settlement (60.000 sq. meters). During the Early Bronze Age, very large settlements appear (cf. Düşübakıması and Kocahöyük). According to Fig.III.8, the highest sherd densities lie between 90 to 200 sherds per 10x10 m quadrates. Only one site, Yağcılı has a very high sherd density of ca. 500 sherds per 10x10 quadrats. It seems that there are no big differences in the highest sherd densities between Neolithic, Chalcolithic and Early Bronze Age settlements in the Edirne region.

CHAPTER IV ARTEFACTS

IV.A. INTRODUCTION

Hodder suggest that material things have two separate kinds of meaning; the first one is functional or material, and the second is concerned with the content of ideas and symbols (Hodder 1986: 121). The materiality and the symbolic significant of objects are deeply interwoven, and cannot be distinguished in the way in which they are experienced and understood (Thomas 1991: 92). Artefacts are made for a purpose, but in use acquire further associations and meanings in addition to that initial purpose, and the processes associated with this are very similar to those involved in social relationships. Being embedded in social relationships, artefacts operate in ways that are similar to human beings, and they come to have social identities. The production of any artefacts can be described as a sequence of steps that requires the acquisition of raw materials, the operation of particular techniques and the skill or social knowledge of the performer. Making an axe for instance, may require the selection of rock, shape preform bifaces, dull edges and grinding platforms, detailed fine flaking and grinding it. This sequence of steps has been described as a "chaîne opératoire" (Leroi-Gourhan 1964). It is both a series of technical acts, that requires the manipulation of tools and raw materials, and a social act, that requires cultural knowledge about appropriate ways of working the materials. The distribution of goods from sources to people desiring them is an important function of the exchange system. The important of social functions of exchange was first noted by Malinowski in "kula" exchange (1922) and Mauss in gift exchange (1925). These systems can also create long-lasting ties of indebtedness and obligation between people, and transactions may play an important role in marriage rites, in cementing alliances and ties of affiliation, and in the creation and maintenance of political authority. On the other hand, the substantivist understanding that different forms of exchange - reciprocity, redistribution and market exchange - are related to the socio-political organisation in which they are embedded (Polanyi 1957). It is difficult to separate acts of consumption from acts of production and exchange. Goods do not last forever. They break, wear out or become inappropriate. The fact is that goods are always consumed. Each consumer effectively appropriates new goods. It is the process of consumption, and the decay of material objects that permits the production of new goods through which society itself is reproduced both in the relations of production and consumption established.

The following discussion is based on results of our extensive survey carried out in 1995 and 1997 in the Edirne region. I believe that the artefacts - pottery, chipped stone,

stone axes and figurines - discussed below represent almost all the artefact types in Turkish Thrace in the Neolithic and Chalcolithic Periods.

IV.B. POTTERY

IV.B.1. Introduction

The transformation of clay into pottery was one of the important innovations in human history. A predominant hypothesis is that pottery was invented in order to detoxify foods and make them more palatable (Barnett and Hoopes 1995). Cooking and boiling in ceramic vessels that could be left on the fire was less energy intensive than stone boiling, a technique that can be used with perishable containers. Pottery could also be used to introduce new methods of food processing, such as baking, toasting and brewing. Another theory about the principal attraction of early pottery was a prestige good used in ritual displays, particularly in the context of competitive feasts (Barnett and Hoopes 1995). According to Barnett, early pottery may have played as symbols of ethnicity and social group identity in Southeast Europe (1990). The numerous examples of early pottery, which are highly decorated or display a particular manufacturing technology, combined in some cases with evidence of transport or exchange, provide empirical support for the application of prestige or symbolic models to the appearance of ceramics.

The question of relationships between pottery making and agriculture is one of the important problems in archaeology. Childe saw pottery as characteristic of Neolithic communities (Childe 1951: 76). To consider pottery a Neolithic industry overlooks the context of its origins, especially given current interpretations of agriculture as the hallmark of the Neolithic period. Studies of complex hunter-gatherers in different parts of the world indicate that pottery making cannot be used as a hallmark of the Neolithic period. The earliest pottery in Japan was produced by early Holocene fishermen (Aikens 1995). Pottery was being utilized by Ertebølle Mesolithic cultures of Northern Europe before the earliest appearance of domesticates (Close 1995). Pottery was also found in the Khartoum Mesolithic, North Africa (Gebauer 1995). The use of clay to make pottery does not seem to have originated in any single time and place in human history. It seems that no important relationship exists between pottery and agriculture, and there is also no predictable cause-and-effect relationships between them. Just as pottery preceded agriculture in several instances, so the reverse was also true. In Eastern Turkey and the Levant, domestication preceded ceramic production by millennia. Containers made of ground stone or limestone, wood and skins etc. (e.g. Özdoğan A. 1999) served many of the functions for which ceramic vessels were later utilized.

IV.B.2. Social and Cultural Aspects of Pottery

Although pottery may be used for the most basic tasks, such as cooking and food storage, it also may be used in culturally significant or emotionally charged situations, for example, religious ritual, mortuary activity, and a variety of ceremonies involving food. Its portability is an advantage in transitions from familiar to unfamiliar or sacred to profane contexts or in situations of changing visibility (Rice 1987: 268). Pottery, through the medium of different colours, decorative styles and shapes, provided a means for differentiating between groups and asserting ethnic differences, social status and hierarchies. Colours on pottery are an important aspect of the structure of belief or world-view of people. For example, in some Pueblo communities in Mexico, two colours, red and black are relatively restricted. Red colour is associated with life and day, while black with death and night (Rice 1987: 332). Black vessels are valued and particularly associated with ceremonies honouring the dead (Kaplan and Levine 1981). Mafa and Bulahay people in Cameroon made black and red burnished vessels. Black is attractive to the ancestors who are in this way being invited to partake not only of the sacrifices specially offered them but also of their descendants' everyday meals (David et al. 1988). Red, the colour of power, offers protection against its dangers. The weaker the person or the vessel and the more exposed to sorcery or other supernatural risk, the more red is needed as protection (David et al. 1988).

Decorative styles send messages of social, political and economic group affiliation that are known and recognized by the person displaying the message and by the person intended to receive it (Wobst 1977). According to Wobst, decorative style or stylistic behaviour has three major functions. One is to make social interactions more predictable by providing immediate visual information about the participants, thereby reducing stress. Objects carried or displayed all bear information about status or group affiliation that would otherwise be unknown or difficult to elicit. A second function is that, over the long term, as societies become more complex, styles reinforce social differentiation by symbolizing group (rank, status) affiliation and enhancing within-group solidarity. The third function is closely related to the second; stylistic behaviour is important in signifying and maintaining the boundaries between groups by visual messages of within-group solidarity (Wobst 1977: 327-328). Braithwaite argues that decoration on the pottery of the Azande people in Sudan is a form of symbolic and ritual discourse used primarily in stressful interactions between men and women (Braithwaite 1982). Hodder observes that the role of artefact styles in symbolizing group identity is especially significant when tensions exist between groups (1979). David et al. interpret Mafa and Bulahay pottery decoration in terms of the symbolic parallels between pots and people (David et al. 1988). They suggested that pots are decorated because pots are like people. They argued that

pottery helps to reinforce social values. Far from being mere decoration or messages consciously emblematic of ethnicity, designs on pottery are channels through which society implants its values in the individual (David et al. 1988). Barley also argued that the identification of part of the body with part of the pot is greatly strengthened when the decoration of the pot recalls that of the human body (Barley 1994: 121). Differences of form and decoration help create categories of vessels that may be easily related to categories of time and persons. Hence their tendency to occur in contexts of ceremonial or display (Barley 1994). It seems that the more the decoration on pots, the greater will be their ritual load.

Pottery had important roles in ceremonial activities, such as weddings, initiation and mortuary practices. For example, during the final wedding ceremony of Endo people in Kenya, two pots - "terre ma" and "morr bo terr" - are used (Welbourn 1984). The "terre ma" plays a central symbolic role for the Endo in this ceremony. It presented and represented the male universe of patrilocality, animal husbandry, irrigation-maintenance, the social importance and allegiance of the clan. The men enact and recreate for themselves the power of their universe by means of their actions around the pot in this ceremony (Welbourn 1984). The meeting "terr" begins as a platform for discussing and resolving matters affecting the security of the clan against impurity, in particular the impurity which can pollute them through the actions of women (Welbourn 1984). The pot in this ceremony is needed as a central force and focal point for re-establishing the order of the men's universe and, by extension, the whole known symbolic world (Welbourn 1984). During the initiation ceremony of Bemba, an uninitiated girl is called as "citango", an unfired pot, and the whole ritual's basis of chiefly power is implicated in the use of fire, sex and the relationship between them (Barley 1994: 106). Pottery is also associated with food preparation, which may be a focus of taboos and rituals. Food provided sustenance for the body; it also provided food for thought about local group dynamics and interrelationships. Among the Sabarl islanders, certain foods symbolically represented the people in ritual and ceremonial occasions are referred to as the "real food" - food of the ancestors (Battaglia 1990). In the celebration of the festival of "Todos Santos" in the Andean highlands, pottery is important for the production and presentation of the food and drinks that are the essential medium of communication between the living and the dead (Sillar 2000: 122). At the beginning of November, foods are prepared for the evocation of the dead. The dead returning to the community during "Todos Santos" bring new life to the next year's crops. Ethnographical investigations show that big ceremonies require big vessels. For example, social and larger cooking vessels are used in the Maya area during ritual occasions (Mills 1999).

According to Shanks and Tilley, pottery is displayed for the benefit of the living and their relationships to the dead (Shanks and Tilley 1987: 169). There is a difference

between the pottery found on settlements and in the grave, and both have different biographies. The most elaborate vessels were manufactured for deposition at the graves. The vessels possibly contained products and are linked with life and death and associated with the continuance of the social order after life. In Neolithic passage graves in Denmark, vessels were ritually destroyed at the graves, especially outside their entrances (Tilley 1996: 317). Vessels were objectified persons; they were specially identified in various ways with the bodies of persons making them or own them. Barley argued that pots like human bodies are often locations for spiritual essences, whether these are ancestors, nature spirits or deities, diseases or human capacities (1994: 85). Smashing a vessel is metaphorically like smashing and destroying a human body. Ethnographical studies show that in Africa, death often involves the breaking of pots while marriage involves making them (Barley 1994: 92). Amongst the Dowagos in West Africa, when a women dies, her water-jar is dressed like a human being and beer poured into it. The bubbling of the beer is regarded as indicating the presence of her spirit (Barley 1994: 88). After death, they remove the skulls of the deceased for further ritual use and keep them in pots.

Ethnographic study shows that, among various groups in Africa, the deliberate smashing of pottery was dangerous and, on these occasions, special ritual was enacted. However, broken pottery is used for different purposes. The Endo people in Kenya, for example, use broken pots as roof-top guards, vessels for water to ward off evil and guards to protect water-channels (Welbourn 1984).

Getting clay for making pottery is also the focus of taboos and rituals. Among the Azera in New Guinea, only married women without children can gather clay. They gather clay in only certain times and they must wear traditional dress while gathering clay (Rice 1987). In Thailand, potters may exploit clay in secret locations that are not divulged to outsiders (Rice 1987).

The following discussions are based on the pottery from the Edirne region. The question is how the social and cultural aspects outlined above relate to the Edirne region pottery. Is there any symbolic function of the Edirne region pottery or can we talk about the relationships between colours or decorative designs on the Edirne pottery? Before answering these questions, we need to investigate the Edirne region pottery in detail.

IV.B.3. Pottery From The Edirne Region

What follows here is a general introduction to the prehistoric pottery found in the Edirne region and the confluence area of the Meriç and Ergene Rivers. During our surveys, early Neolithic pottery was found only in Hamaylitarla in the Şarköy region, which will be also discussed here. Only the pottery collected during our 1995-1997 extensive surface surveys will be presented here. A total of 1,103 Neolithic sherds and 1,687 Chalcolithic

sherds were investigated. Most of the sherds consist of rims and decorated bodies. There are, as yet, no technological studies of the pottery. They were investigated by eye only.

IV.B.3.1. Manufacture

Coiling is one of the most popular and simple methods of forming a vessel by hand. The procedure is to roll a quantity of clay into a length of rope and coil it in a vertical spiral. The coils are then pinched together to form a continuous surface. Fracture patterns diagnostic of coiling were observed on Neolithic and Chalcolithic sherds of the Edirne region. These are of two kinds; fractures along coil interfaces, which expose the rounded upper or lower surface of coils and rare step-like fractures along the junction of coils.

Pinching is also a simple method of forming a vessel. It is often used for small or simple vessels. It involves squeezing clay between the thumbs and opposing fingers while rotating the vessel in order simultaneously to thin the walls and increase their height. In the Edirne region, it seems that this technique was a second popular technique. However, this technique was used for the manufacturing for the modelling of only the lower part of a vessel, the upper part being made by coiling. This method was well observed in the late Chalcolithic sherds. It seems both coiling and pinching were used at the same time for manufacturing most of the Neolithic and Chalcolithic vessels in the Edirne region. A peculiar technique was used to make the Kocatepe high-pedestalled foots. Inside the walls, thick clay was scraped off with a broad bone or wood spatula. The upper round edges were made separately and attached afterwards (Plate I: bottom).

Two Neolithic and six Chalcolithic sherds from Yağcılı, Altıağaç, Kocatepe, Tepeyani and Yumurta Tepe have mat impressions on their bases (Plate I: top). These impressions could have been made when the finished vessels were left to dry on mats.

There are two methods were observed for application of handles and lugs. First, an oblong plug was added to the bottom surface of the handle or lug, which went through the wall of the vessel. Second, lugs were sometimes applied as thick rounded bulbs of clay, which were pressed onto the surface of the vessel (Plate I: bottom). The second method was especially observed in Early Neolithic sherds.

Pottery is fired by two techniques: with and without a kiln. One method of firing without kilns is called bonfire-fired. Firings done by this technique are always short and generally achieve relatively low temperatures. Temperatures attained by bonfire firing generally range between 650-900 C°, but higher temperatures may occasionally be reached (Rice 1987:154). The surfaces of vessels are generally blotchy and uneven in colour, with frequent smoke-staining of the surface. Smoke-staining on fire clouds is caused by the deposition of carbon as a result of direct contact with the smokey flames or partially burnt fuel. The firing temperature of Karanovo graphite ware was investigated by Kingery and

Frierman (Kingery and Frierman 1974). Results show that the graphite were originally fired at a temperature below 800C°, and most probably at about 700C°. Higher temperatures are achieved with kilns. Temperatures attained by kilns generally range between 900-1000C° (Rice 1987: 160). The firing temperature of Cucuteni pottery was investigated by Ellis. Results show that Cucuteni pottery was fired at a temperature about 1000C° in kilns (Ellis 1984: 157). Pit kilns may be considered functionally intermediate between open firings and simple open-topped updraft kilns. Fuel is placed below and above the pots in the pit, and than the assembly fired in much the same way as, is bonfire (Rice 1987:158). Hearths have been found in settlements, which apart from cooking and heating, could have been used for firing vessels (Pyke and Yiouni 1996: 69). Most of the sherds from the Edirne region show that the atmosphere during the firing usually supported incomplete oxidation. Fresh breaks in sherds show a dark core between two light coloured layers. The presence of a dark grey or black colour on the surface of the vessels indicates incomplete oxidation; either an atmosphere with insufficient oxygen or a short period or low temperatures of firing (Rice 1987: 343). Brown colour indicates very incomplete to relatively well oxidized, or the colour may be due to iron in a ferric state.

IV.B.3.2. Wares

NEOLITHIC WARE TYPES

Early Neolithic pottery (Hamaylitarla): The vast majority of the Hamaylitarla pottery is red slipped and burnished (90%). Black and brown burnished sherds were found in small quantities (10%). A total of 100 sherds was investigated. All pottery is handmade, thin-walled and with abundant use of grit, shell (?) and sand temper. A little chaff is usually present in the paste (Plate II: top). A number of sherds are tempered with chaff only. Mica is rare or absent. The paste colours are black, buff or cream. The different tones of the red and pink slip are applied on both surfaces or on the exterior surface only. The thickness of the application varies greatly. Colours were assigned by eye and a representative sample of sherd colours was assigned by the Munsell colour chart, as follows: RED 2.5 YR 6/6, 2.5 YR 6/8, 2.5 YR 5/8 10R 6/8, PINK 2.5 YR 7/6. Sometimes the firing was irregular, causing mottling and smoke-staining of the surface. Surfaces are usually burnished. Sometimes the interior surfaces are only smoothed.

Middle Neolithic pottery (Karanovo III-Vesselinovo): Karanovo III pottery was investigated at the sites of Altağaç, Kaldırım, Köprübaşı and Gavurdere. A total of 320 sherds was investigated. All pottery is handmade. The clay contains very fine sand and mica and tempered with grit (Plate III). The grit is evenly distributed and in general no

large size of grits interrupt the consistency of the fabric. A small amount of straw and chaff occasionally was included. Karanovo III is characterized by dark colours. Colours are predominantly grey, black and dark brown. Colours were assigned by the Munsell colour chart, as follows: GREY N5, N3 , BLACK N 2.5 , BROWN 7.5YR 3/4. Surfaces are usually smoothed and burnished. The quality of burnishing can vary from medium to fine. Most of the sherds have carbon coring, indicating poor firing.

Late Neolithic pottery (Karanovo III-IV / Aşağı Pınar 3): All pottery is hand made, and of fine sifted clay with sand, mica and grit inclusions (Plate II: bottom). The pottery has been sorted out mainly into 4 ware groups (Table IV.2).

The first group is dark coloured ware. The clay is usually small grit, mica and sand inclusions. In some examples, mica is very rare and a little chaff is present in the paste. The surface colour varies black to grey. Colours were assigned by the Munsell colour chart, as follows: BLACK N 2.5 , GREY N 5. Surfaces are smoothed and burnished.

The second group is slipped ware. It is characterized by a red and reddish grey slip over a black or sometimes buff surface. Colours were assigned by eye and a representative sample of sherd colours was assigned by the Munsell colour chart, as follows: RED 2.5 YR 7/6, 10 R 5/8 , REDDISH GREY 7.5 YR 7/2. The clay is same as the first ware type.

The third group is Red coloured ware. The clay is the same as the first ware type. The surface colour varies reddish brown to reddish buff. A number of sherds have black on interior. Colours were assigned by the Munsell colour chart, as follows: REDDISH BUFF 5 YR 7/8, REDDISH BROWN 7.5 YR 5/6, 5 YR 5/6.

The fourth group is coarse ware. It is very gritty and also contains varying amounts of organic matter. The surface colour is black, grey or buff.

Table IV.1. Ware types of Karanovo III-IV pottery.

| SITE | WARE TYPES | | | |
|----------|---------------|------------|--------------|----------|
| | Dark coloured | Slipped | Red coloured | Coarse |
| Yagcili | 90 (47.7%) | 20 (10.5%) | 66 (35%) | 13 (6.8) |
| Kaldirim | 7 (19.5%) | 7 (19.5%) | 19 (52.7%) | 3 (8.3%) |
| TOTAL | 97 | 27 | 85 | 16 |

Late Neolithic pottery (Çardakalti and Kalojanovec): Çardakalti pottery was investigated at the sites of Çardakalti, Avariz / Kumocağı, Köprübaşı and Değirmençeşme. A total of 243 sherds was investigated. All Çardakalti pottery is handmade, and of fine textured clay with abundant use of sand and mica. The clay contains also medium and small grits and sometimes a little chaff (Plate IV). The first group has buff, light brown or reddish buff coloured surfaces. It represents 64 % of the total assemblages. Colours were assigned by

eye and a representative sample of sherd colours was assigned by the Munsell colour chart, as follows: REDDISH BUFF 2.5 YR 7/8, 7.5 YR 4/6, 5 YR 5/6 BUFF OR LIGHT BROWN 5YR 7/8, 5YR 7/6. The surfaces are evenly smoothed and are generally left unburnished. Sometimes are lightly burnished. The firing was irregular, causing mottling and smoke-staining of the surface. The second group has black or blackish grey coloured surfaces: BLACK N 2.5 and GREY N 4. The surfaces are evenly smoothed and are either left unburnished or are lightly burnished. The dark coloured ware represents 36 % of the total assemblages.

Kalojanovec pottery is all handmade. It contains grit, mica, sand and small stone inclusions (Plate V: top). The first group represents the characteristic blackish grey coloured ware of Çardakalti. However in Kalojanovec, black surfaces are not dominant and grit inclusions are more than sand. The second group has reddish-brown, reddish-buff and grey surfaces. Colours were assigned by the Munsell colour chart, as follows: REDDISH BROWN 2.5 YR 4/4, 5 YR 4/4, REDDISH BUFF 7.5 YR 4/6, 5 YR 5/6, GREY 2.5 YR 5/1. The surfaces are smoothed and left unburnished. Smoothing the surface of a vessel produces an overall regular surface with a matt appearance.

Late Neolithic pottery (Maslidere): Maslidere pottery was investigated at the sites of Altiagaç, Gavurdere, Bağlıksirti, Değirmençeşme, Karşıbağlar and Arpalik Tepe. A total of 180 sherds was investigated. All Maslidere pottery is handmade. The paste is rather coarse, including abundant use of sand, grit, stone, shell (?) and chaff temper (Plate V: bottom and Plate VI). The surface colours vary from reddish buff, buff to light brown. There are also black, greyish black and brick red surfaces. Colours were assigned by eye and a representative sample of sherd colours was assigned by the Munsell colour chart, as follows: BUFF and BROWN 5YR 6/3, 5YR 7/3, 5YR 7/4, 7.5 YR 7/4, REDDISH BROWN 2.5 YR 4/8, 2.5 YR 5/8, RED 10 R 5/8, GREY N4, BLACK N 2.5. Interior surface of the vessels are smoothed or slightly burnished, while exterior surfaces are roughened either by scraping or combing with an implement or by wiping over the wet surface by fingers. Occasionally, below the rim is also slightly burnished. Fresh breaks in sherds show incomplete oxidation firing.

To sum up, The Early Neolithic pottery is characterised by red slipped and burnished wares. The closest parallels can be found in Western Anatolian sites, such as Coşkuntepe (Seeher 1990) and Morali (French 1965b). Dark burnished ware similar to Karanovo III is also found in Turkish Thrace. Late Neolithic Karanovo III-IV pottery has been sorted out into 4 ware groups - dark coloured, red coloured, slipped and coarse - and the closest examples for these wares can be found at Aşağı Pinar 3. Maslidere is characterised by a coarse ware. Similar wares can be found at Töptepe (Özdoğan et al.

1991). No Maslidere ware was found in Bulgaria, Greece or Anatolia. Çardakalti pottery is represented by buff, reddish buff and dark coloured wares. It is difficult to find any comparisons for buff ware especially, in Bulgaria and Northwest Anatolia.

CHALCOLITHIC WARE TYPES

Pre-Cucuteni / Maritsa (= Kocatepe) (Plate: All pottery is hand made (Plate VII-X). It has been sorted out into 4 ware groups (Table IV.3).

1. Dark Coloured Ware: Fine textured clay contains small grits, fine mica and sand inclusions. Some sherds seem to have been deliberately tempered with mica. The coarseness of the paste varies from fine to medium fine. The surface colour varies between grey, greyish black to pale black. Colours were assigned by the Munsell colour chart, as follows: GREY N 5, N 6 , BLACK N 3. Both interior and exterior surfaces are well smoothed and either left unburnished or lightly burnished. A number of sherds coated with a dark slip.

2. Red Coloured Ware: The clay is usually fine with mica, grit and some quartzite inclusions. Some sherds seem to have been deliberately tempered with mica. The surface colour varies from reddish buff to reddish brown. Colours were assigned by the Munsell colour chart, as follows: REDDISH BUFF 7.5YR 7/6, 5YR 5/6, REDDISH BROWN 2.5YR 5/8, 10R 5/6. Both surfaces are smoothed and either left unburnished or slightly burnished.

3. Thick-walled Ware: This is the most characteristic ware type. The vessel walls are very thick; an average thickness is 1.5 cm. Clay contains sand, mica, medium and large grit and small amount of chaff. Some sherds seem to have been deliberately tempered with mica. The surface colours are grey, greyish black, dull black and reddish buff. Brick-red sherds were found in small quantities. Colours were assigned by the Munsell colour chart, as follows: GREY and GREYISH BLACK N4, N3, 2.5Y 3/1, BLACK 2.5 Y 2.5/1, N2.5, REDDISH BUFF 7.5YR 7/6, 5YR 5/6, RED 10R 5/8. Exterior surfaces are smoothed and left unburnished. Burnished sherds were found in small quantities. Interior surfaces are either smoothed or left without any treatment.

4. Coarse Ware: The paste is rather coarse with abundant use of large grit and sand. It contains also varying amounts of organic matter. The large sized grit contributes to jagged, rough breaks. The surface colour varies from buff to reddish buff; REDDISH BUFF 5YR 6/4.

Table IV.2. Ware types of Pre-Cucuteni / Maritsa (= Kocatepe) pottery.

| SITE | WARE TYPES | | | |
|-----------|---------------|--------------|--------------|---------|
| | Dark coloured | Red coloured | Thick-walled | Coarse |
| Kavakli 2 | 59 (42%) | 53 (38%) | 24 (18%) | 3 (2%) |
| Yumurta T | 29 (42%) | 17 (25%) | 23 (33%) | |
| Tepeyani | 47 (20%) | 30 (13%) | 141 (60%) | 16 (7%) |
| Karabas | 35 (23%) | 23 (15%) | 91 (59%) | 5 (3%) |
| Kocatepe | 37 (43%) | 16 (18%) | 34 (39%) | |
| Arpac | 25 (45%) | 19 (35%) | 10 (18%) | 1 (2%) |
| TOTAL | 232 | 158 | 323 | 25 |

Karanovo VI / Gumelnița: All pottery is handmade, and of fine textured clay always with sand, grit and mica inclusions (Plate XI-XII). Occasionally a little chaff in the paste. The pottery has been sorted out into 5 ware groups. The first group represents the characteristic dark coloured ware identified among the material of Pre-Cucuteni / Maritsa (= Kocatepe). However, in this period some dark coloured sherds are very well burnished. The second group represents also the characteristic red coloured ware of previous period.

The third group is Buff, Light Brown Burnished Ware: The clay is usually fine with a large amount of small grit inclusions. Very small flecks of mica are always present. The surface colour varies from buff to light brown. Colours were assigned by the Munsell colour chart, as follows: BUFF and BROWN 5YR 7/4, 5YR 7/6, 5YR 5/8, 7.5YR 7/4. Both surfaces are smoothed and highly burnished. Most of the sherds are hard fired and compact.

The fourth group is Slipped Ware: It is characterized by a decidedly buff or reddish-buff slip over greyish-black surface. Colours were assigned by the Munsell colour chart, as follows: BUFF 5YR 7/4, REDDISH BUFF 2.5YR 7/6, 10R 6/8. In Kavakli Red slipped sherds over black surface and a few black slipped sherds over red surface were found. Slip is generally very thin. Mica inclusions are more common in the paste. Generally exterior surfaces are burnished. The quality of burnishing can vary from medium to fine.

Apart from these wares, coarse ware typical Pre-Cucuteni / Maritsa (= Kocatepe) rarely occurs. The percentage of wares recorded from the four main settlements in the Edirne region is as follows (Table IV.3).

Table IV.3. Ware types of Karanovo VI / Gumelnița pottery.

| SITE | WARE TYPES | | | | |
|-----------|---------------|-----------------|----------|--------------|--------|
| | Dark Coloured | Brown Burnished | Slipped | Red Coloured | Coarse |
| Yumurta T | 131 (40%) | 6 (2%) | 5 (2%) | 179 (54%) | 6 (2%) |
| Tepeyani | 112 (50%) | 8 (4%) | 8 (4%) | 93 (41%) | 2 (1%) |
| Karabas | 33 (36 %) | 5 (5%) | 12 (13%) | 41 (45%) | 2 (1%) |
| Kavakli 1 | 97 (37 %) | 5 (2%) | 37 (14%) | 120 (46%) | 2 (1%) |
| TOTAL | 373 | 24 | 62 | 433 | 12 |

To sum up, Kocatepe pottery has been sorted out into 4 ware groups - dark coloured, red coloured, thick-walled and coarse. The typical dark coloured and some thick-walled wares of Kocatepe are known in the Maritsa and Pre-Cucuteni groups in the Balkans. In Pre-Cucuteni I-II phases, some sherds seem to have been deliberately tempered with mica as at Kocatepe. In Pre-Cucuteni I-II, some parallels also exist for red coloured ware from Kocatepe. Karanovo VI- Gumelnița pottery has been sorted out into 5 ware groups - dark coloured, buff, brown burnished, slipped, red coloured and coarse. The closest parallels for the dark and red coloured wares can be found in Karanovo VI- Gumelnița sites (cf. Karanovo: Hiller and Nikolov 1997).

IV.B.3.3. Forms

Forms have been sorted out into 3 categories: open forms, closed forms and special forms. Open forms are vessels with the rim angle equal to or smaller than 90°. The rim angle is defined as the angle between the rim line and the upper wall of the vessel (Pyke and Yiouni 1996: 92). Closed forms are vessels with the rim angle larger than 90°. Each category has been divided into forms, such as bowl and jars etc. and types, such as deep bowl with S profile etc. Special categories comprise miniature vessels, boxes and pot stands, etc.

NEOLITHIC POTTERY FORMS

The Early Neolithic pottery (Hamaylitarla)

1. Open Forms

1.A. Bowl

1.A.1. Deep bowl with "S" profile: This is a common shape. It shows two different types, one is more convex (Fig.IV.1:1) and other is more straighter sided (Fig.IV.1:5), occasionally provided with a bead rim. Similar forms have been found at Hoca Çeşme IV and III (Özdoğan 1998b: Fig.4; no.4978, Fig.6; no.4377, Fig.8; no.6074 and 6139), Morali (French 1965b: Fig.3; 6-10, Fig.4;1-4), Coşkuntepe (Seeher 1990: Abb1;9-15), Ayio Gala

(Hood 1981: Fig. 5;9, Fig. 6;13) and Nea Nikomedeia in Macedonia (Pyke and Yiouni 1996: Fig.5.10;6 , 5.12;1-2).

1.A.2. Deep bowl with flaring sides (Fig.IV.1:2): This form is rare. Comparable examples come from the Fikirtepe sites (e.g. Pendik: Özdoğan 1983c: Abb.4;1 ; Ilipinar X Roodenberg 1989-90: Fig.9;6) and Nea Nikomedeia (Pyke and Yiouni 1996: Fig. 5.16;8).

1.A.3. Everted necked bowl (Fig.IV.1:3): This form is also rare. Comparable examples come from Western Anatolian sites (e.g. Morali: French 1965b: Fig.4; 7-8).

1.B. Dish

1.B.1. Straight-sided shallow dishes (Fig.IV.1:6): This form is rare. The examples from the early Neolithic were found at Nea Nikomedeia in Macedonia (Pyke and Yiouni 1996: Fig.5.19;1-10), Coşkuntepe in Western Anatolia (Seeher 1990: Abb.1;21) and Ayio Gala in Chios (Hood 1981: Fig.5;4).

2. Closed Forms

2.A. Jar

2.A.1. Hole-mouth jar (Fig.IV.1:4): These types of jars have slightly concave or convex body and thickened rim. This form is characteristic for the Fikirtepe Culture (e.g. Pendik: Özdoğan 1983c: Abb.5;3-4) and Western Anatolia (e.g. Coşkuntepe: Seeher 1990: Abb.1;1-3 ; Morali: French 1965b: 7-8 ; Ulucak: Derin and Öner 1997: Fig.12).

Vertically placed tube-like and knob-like perforated tubular lugs, as well as crescentic lugs are characteristic (Fig.IV.1:9-11). It seems that lugs are common accessories to deep bowls with "S" profile. Flat and ring bases were found (Fig.IV.1:13-14). Flat bases are more common than ring bases.

Table IV.4. Forms of Early Neolithic (Hamaylitarla) pottery.

| 1.OPEN FORMS | | % frequency, total sample |
|-----------------------------------|--|---------------------------|
| 1A. Bowl | | |
| 1A1. Deep bowl with "S" profile | | 56% |
| 1A2. Deep bowl with flaring sides | | 12% |
| 1A3. Everted necked bowl | | 8% |
| 1B. Dish | | |
| 1B1. Straight-sided dish | | 4% |
| 2. CLOSED FORMS | | |
| 2A. Jar | | |
| 2A1. Hole-mouth jar | | 20% |

Middle Neolithic pottery (Karanovo III-Vesselinovo)

1. Open Forms

1.A. Dish

1.A.1. Straight-sided dish with internally thickened rim (Fig.IV.2:7): This is a very characteristic form. A number of cylindrical legs indicate that legs are common accessories to these dishes (Fig.IV.2:1,4). The closest parallels come from sites such as Karanovo III

(Hiller and Nikolov 1997: Tafel 52;3-6) and Sitagroi I (Renfrew et al. 1986: Fig.11.4;1-16).

1.A.2. Straight-sided dish with rounded rim (Fig.IV.2:8): A similar example can be found at Karanovo III (Hiller and Nikolov 1997: Tafel 10;30, Tafel 7;1).

2. Closed Forms

2.A. Bowl

2.A.1. Rounded bowl: It has a flat base and convex sides, reminiscent of hole-mouth vessels. Similar examples can be found at sites such as Karanovo III (Hiller and Nikolov 1997: Tafel 52;3-6) and Sitagroi I (Renfrew et al.1986: Fig.11.7;1).

2.A.2. Incurved rim bowl (Fig.IV.3:9): This is a rare form.

2.A.3. Carinated rim bowl (Fig.IV.2:6 ; Fig.IV.3:2): This form is also characteristic. It has either a gentle or sharp carination and beaded rim. Occasionally it has a thinned rim. Drama (Fol et al.: 1987 Tafel 19;1). Similar examples can be found at Karanovo III (Hiller and Nikolov 1997: Tafel 54; 2-5, Tafel 55;6) and Drama (Fol et al. 1989: Taf. 19.1).

2.A.4. Carinated bowl: The carination on the body is generally close to the upper part.

2.B. Jar

2.B.1. Necked jar: Necked jars show two types; a short-necked jar and a tall neck with rounded body. Similar examples can be found at Karanovo III (Nikolov 1994: Fig.1;5, Fig.3;1,4) and Yassa Tepe in Bulgaria (Detev 1975: Fig.38). Most of the horned and knob handles came from jars (Fig.IV.2:2-3).

3. Special Forms

3.A. Boxes (Fig.IV.2.5): Triangular or rectangular footed boxes.

Table IV.5. Forms of Karanovo III-Vesselinovo pottery.

| | | % frequency, total sample |
|------------------|--|---------------------------|
| 1.OPEN FORMS | | |
| 1A. Dish | | |
| | 1A1. Straight-sided dish with internally thickened rim | 30% |
| | 1A2. Straight-sided dish with rounded rim | 9% |
| 2. CLOSED FORMS | | |
| 2A. Bowl | | |
| | 2A1. Rounded bowl | 8% |
| | 2A2. Incurved rim bowl | 7% |
| | 2A3. Carinated rim bowl | 19% |
| | 2A4. Carinated bowl | 5% |
| 2B. Jar | | |
| | 2B1. Necked jar | 23% |
| 3. SPECIAL FORMS | | |
| 3A. Boxes | | 1% |

Late Neolithic pottery (Karanovo III-IV / Aşağı Pinar 3)

1. Open forms

1.A. Dish

1.A.1. Straight-sided dish: It has rounded rim. It is rare shape.

1.A.2. Straight-sided dish with internally thickened rim (Fig.IV.4:4 ; Fig.IV.5:7): Similar examples can be found at Aşağı Pinar (Parzinger and Özdoğan 1995: Abb 14;1), at Nova Zogora and Karanovo III-IV (Nikolov 1998a: Tab.21;1-3 ; Tab.18;10-12).

2. Closed Forms

2.A. Bowl

2.A.1. Carinated bowl: It has a rounded rim and carination at the body. It is rare shape.

2.A.2. Bowl with thickened carination (Fig.IV.4:2): This is the most characteristic form. Closest example can be found the sites such as Drama (Lichardus 1991: Abb.4;10,13-16,18), Usoe (Todorova and Vajsov 1993 Fig. 126;10-11) and Aşağı Pinar (Parzinger and Özdoğan 1995: Abb. 14;2-7).

2.A.3. Carinated rim bowl (Fig.IV.4:1): Carination at the rim.

2.A.4. "S" shaped bowl (Fig.IV.4:6): It has rounded body and rim. Similar example can be found at Usoe in Bulgaria (Todorova and Vajsov 1993 Fig. 126;13).

2.A.5. Rounded bowl: It has rounded rim and convex sides.

2.A.6. Round-sided bowl: It is a rare shape. It has rounded rim and flaring sides.

2.B. Jar

2.B.1. Necked jar: This form has tall neck (sometimes very tall) and carinated body, occasionally strap handles on the body or horn handles joining from neck and body. Similar examples can be found at Aşağı Pinar (Parzinger and Özdoğan 1995: Abb.14;11-12, Özdoğan 1999a: Res.32,35), Usoe (Todorova and Vajsov 1993: Fig.126;12). Close parallels can also be found in Paradimi, Greek Thrace (Bakalakis and Sakellariou 1981: Taf. XXI;1-5, Taf. XX;1-7).

3.Special Forms

3.A. Pedestals with cut outs (Fig.IV.4:5): Aşağı Pinar excavations show that these pedestals are related to open dish forms (Özdoğan 1999a: Res.33 ; Parzinger and Özdoğan 1995: Abb.15;1-2). Similar examples can also be found at Nova Zogora and Karanovo III-IV (Nikolov 1998a: Tab.21:9 ; Tab.15;8,10)

3.B. Boxes (Fig.IV.5:2,4): Triangular footed boxes, occasionally knobs set on each corner. The closest example comes from Aşağı Pinar (Özdoğan et al. 1997: Res.4).

3.C. Vessels with perforations (Fig.IV.5:5): This form is rare.

Horned and knob handles were also found Karanovo III-IV and Aşağı Pinar 2 and 3. In this period, however, knobs seem like projections (Fig.IV.5:1).

Table IV.6. Forms of Karanovo III-IV pottery.

| | % frequency, total sample |
|--|---------------------------|
| 1.OPEN FORMS | |
| 1A. Dish | |
| 1A1. Straight-sided dish | 3.1% |
| 1A2. Straight-sided dish with internally thickened rim | 10.6% |
| 2. CLOSED FORMS | |
| 2A. Bowl | |
| 2A1. Carinated bowl | 11.8% |
| 2A2. Bowl with thickened carination | 28.8 |
| 2A3. Carinated rim bowl | 11.8% |
| 2A4. "S" shaped bowl | 1% |
| 2A5. Rounded bowl | 22.3% |
| 2A6. Round-sided bowl | 2.2% |
| 2B. Jar | |
| 2B1. Necked jar | 2.2% |
| 3. SPECIAL FORMS | |
| 3A. Pedestals with cut outs | 1.0% |
| 3B. Boxes | 4.2% |
| 3C. Vessels with perforations | 1.0% |

Late Neolithic pottery (Çardakalti and Kalojanovec)

1.Open forms

1.A.Bowl

1.A.1. Carinated bowl (Fig.IV.7:5 ; Fig.IV.9:3): It has either smooth or sharp carination with rounded rim.

1.A.2. Round-sided bowl (Fig.IV.8:4): Hemispherical form with rounded rim or cut on the top rim.

1.A.3. Straight-sided deep bowl (Fig.7:2): This form is reminiscent of a "tulip" shape. It has a thickened rim.

1.A.4. "S" shaped bowl (Fig.IV.9:1): Deep bowls with gentle "S" shape with a rounded rim.

1.B. Dish

1.B.1. Straight-sided dish (Fig.IV.7:4): It has a rounded rim.

2. Closed Forms

1.A. Bowl

1.A.1. Rounded bowl (Hole-mouth) (Fig.IV.7:1,3): This is the most characteristic form. These bowls have rounded body and thickened rim.

2.B. Jar

2.B.1. Necked jar (Fig.IV.8:7): Tall necked jars, occasionally with carination and unperforated knobs on its carination.

An open, straight-sided dish with plain rim is the characteristic form for Kalojanovec. They have flat and ring bases, and occasionally expended or high pedestal base (Fig.IV.6). Similar examples which are probably closest to our examples from sites such as Nova Zagora-Hlebozavoda (Todorova and Vajsov 1993: Fig.109;17,18,20) and

Drama in Bulgaria (Lichardus et al. 2000: Tafel 25;1-7). Besides straight-sided dishes, short-necked jars with a large carinated body and bowls with a thickened carination were also noted.

Table IV.7. Forms of Çardakalti pottery.

| | % frequency, total sample |
|--------------------------|---------------------------|
| 1.OPEN FORMS | |
| 1A. Bowl | |
| 1A1. Carinated bowl | 7% |
| 1A2. Round-sided bowl | 28% |
| 1A3. Straight sided bowl | 9% |
| 1A4. "S" Shaped bowl | 7% |
| 1B. Dish | |
| 1B1. Straight-sided dish | 13% |
| 2. CLOSED FORMS | |
| 2A. Bowl | |
| 2A1. Rounded bowl | 27% |
| 2B. Jar | |
| 2B1. Necked jar | 9% |

Late Neolithic (Maslidere)

1. Open Forms: There are no open forms.

2. Closed Forms

2.A. Bowl

2.A.1. Rounded bowl (Hole-mouth) (Fig.IV.10:1-5 ; Fig.IV.11:1-2): This is a characteristic form. It has flat base and convex sides, occasionally with horn-handle.

2.A.1. Carinated bowl (Fig.IV.11:3,6): This has the same shape as the rounded bowl, only difference being the carination on the body.

Table IV.8. Forms of Maslidere pottery.

| | % frequency, total sample |
|---------------------|---------------------------|
| 1. CLOSED FORMS | |
| 1A. Bowl | |
| 1A1. Rounded bowl | 60% |
| 1A2. Carinated bowl | 40% |

To sum up, five different forms were distinguished in Early Neolithic pottery. Among them the most frequent form is a deep bowl with "S" profile. Similar examples for Early Neolithic Hamaylitarla pottery can be found in Western Anatolian and Macedonian sites. Eight different forms were distinguished in Karanovo III pottery; the most frequent form being the straight-sided dish with internally thickened rim. Almost all forms can be found in Karanovo III sites in Bulgaria. Twelve different forms were distinguished in Karanovo III-IV pottery; the most frequent forms are bowls with thickened carination and rounded bowls. The closest parallels for Karanovo III-IV forms can be found at Aşağı Pinar 3 (Parzinger and Özdoğan 1995), at Nova Zagora and Karanovo (Nikolov 1998a). Seven different forms were distinguished in Çardakalti pottery. It is difficult to find exact

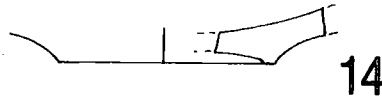
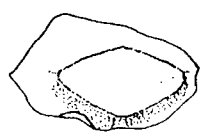
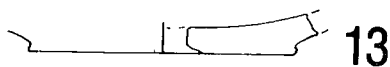
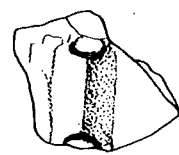
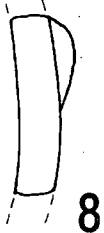
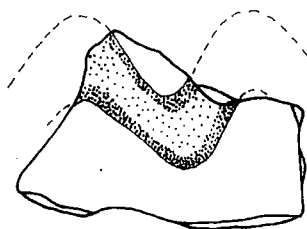
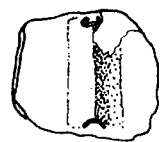
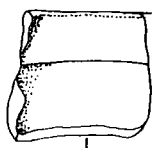
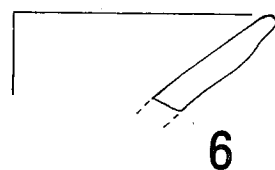
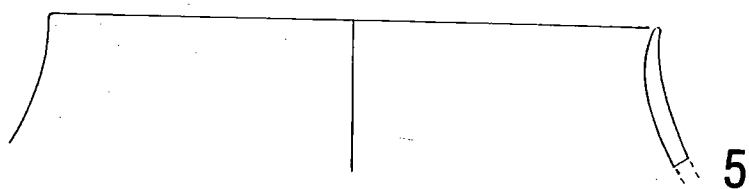
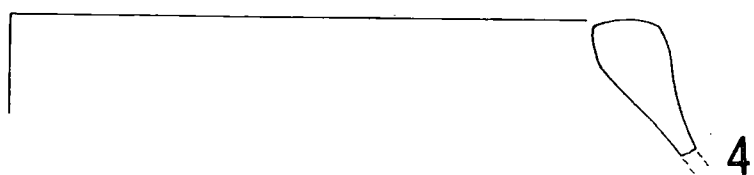
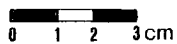
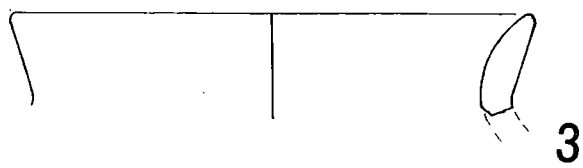
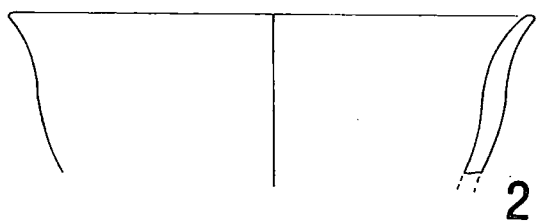
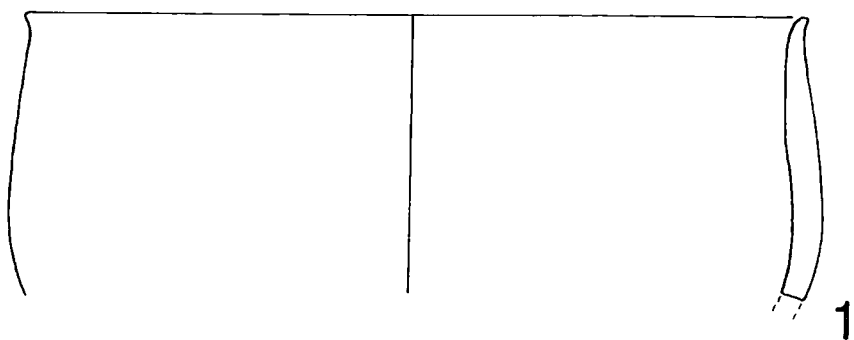


Fig.IV.1. Early Neolithic pottery from Hamaylitarla.

1. Hamaylitarla. Medium fine fabric, dark red coloured slip on back surfaces, burnished on exterior, interior smoothed.
2. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are burnished.
3. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
4. Hamaylitarla. Medium fine fabric, red coloured slip on black surfaces, both surfaces are lightly burnished.
5. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
6. Hamaylitarla. Medium fine fabric, buff-cream in colour. both surfaces are lightly burnished.
7. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
8. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
9. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
10. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
11. Hamaylitarla. Medium fine fabric, red coloured slip on buff surfaces, both surfaces are lightly burnished.
12. Hamaylitarla. Medium fine fabric, reddish buff in colour, both surfaces are smoothed only.
13. Hamaylitarla. Medium fine fabric, red coloured slip on black surfaces, both surfaces are smoothed.
14. Hamaylitarla. Hamaylitarla. Medium fine fabric, red coloured slip on black surfaces, both surfaces are smoothed.

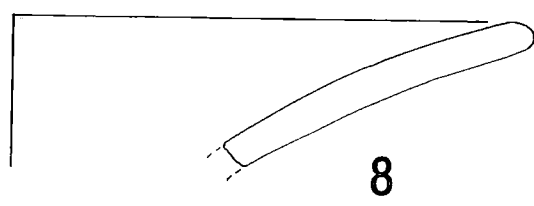
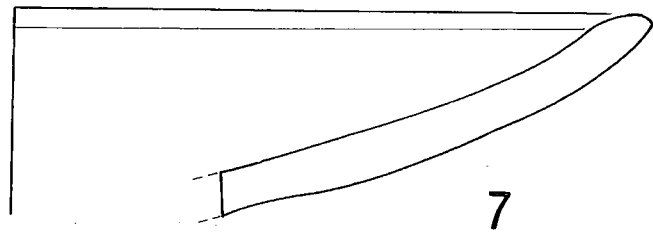
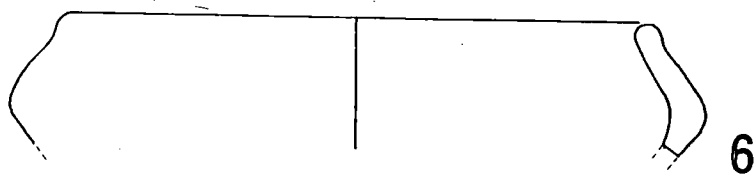
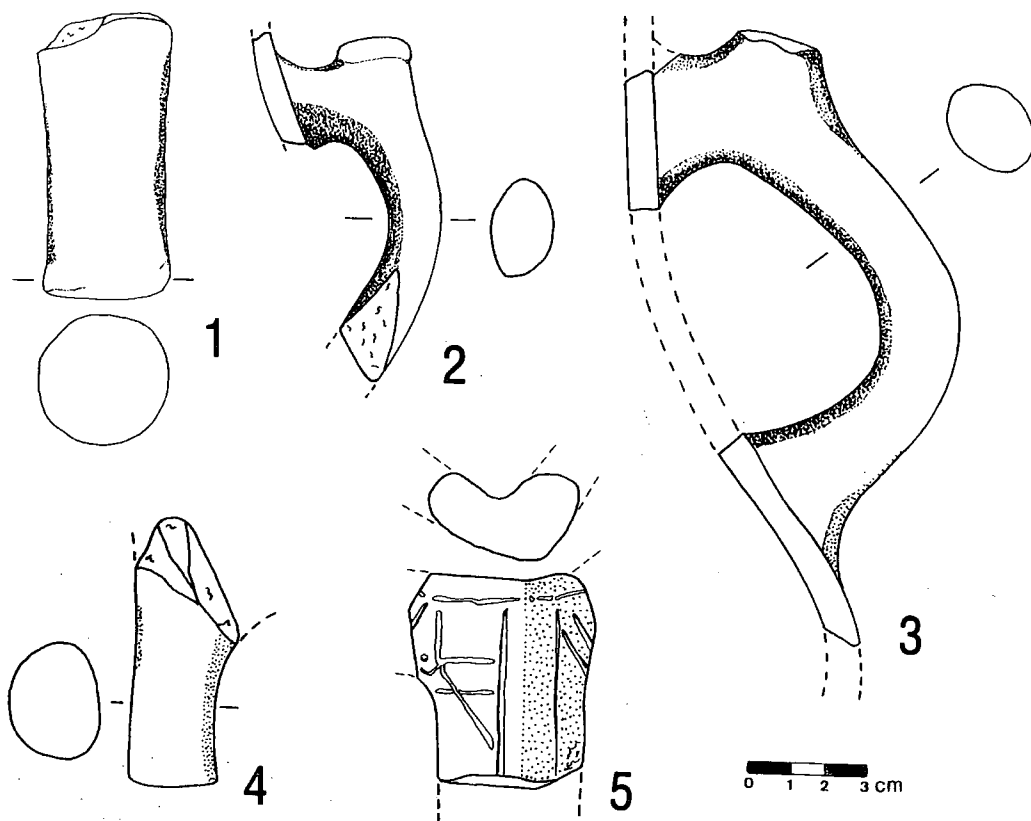
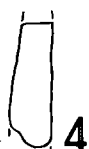
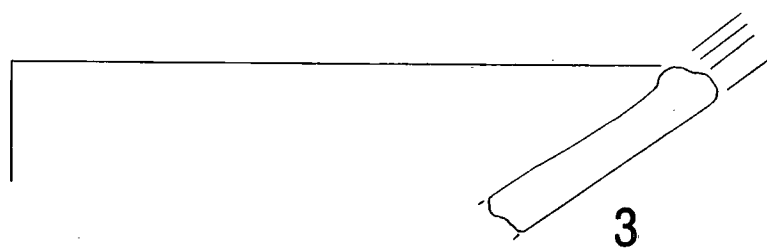
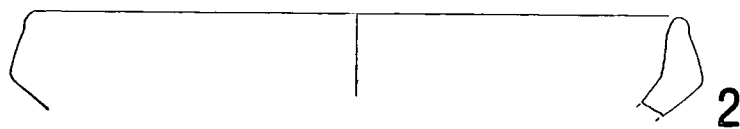
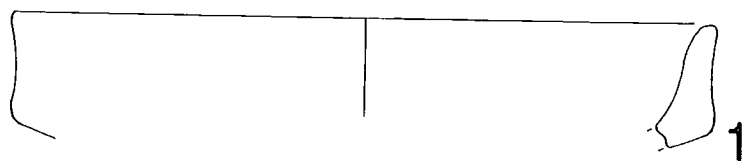


Fig.IV.2. Middle Neolithic (Karanovo III-Vesselinovo) pottery from Altiagaç.

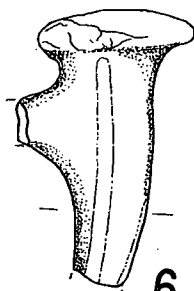
1. Altiagaç. Fragment of a leg. Medium fine fabric, grey-black in colour, lightly burnished.
2. Altiagaç. Horned handle. Medium fine fabric, black in colour, both surfaces are burnished.
3. Altiagaç. Horned handle. Medium fine fabric, black-grey in colour, both surfaces are lightly burnished.
4. Altiagaç. Fragment of a leg. Medium fine fabric, black-grey in colour, both surfaces are
5. Altiagaç. Fragment of a box. Medium fine fabric, brown in colour, both surfaces are smoothed.
6. Altiagaç. Medium fine fabric, black in colour, both surfaces are smoothed.
7. Altiagaç. Medium fine fabric, brown exterior, black-grey interior, interior burnished exterior smoothed.
8. Altiagaç. Medium fine fabric, black exterior, brown-black interior, burnished.



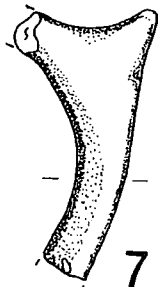
4



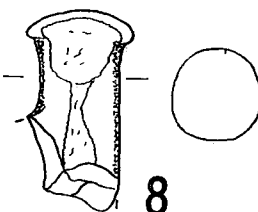
5



6



7



8

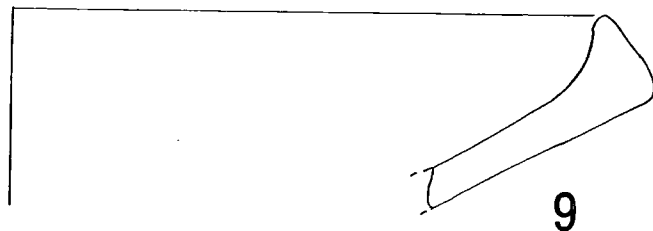
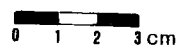
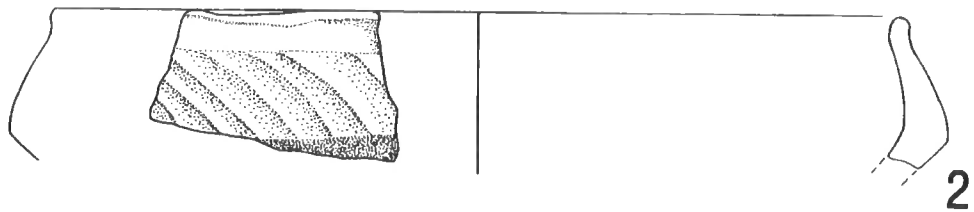
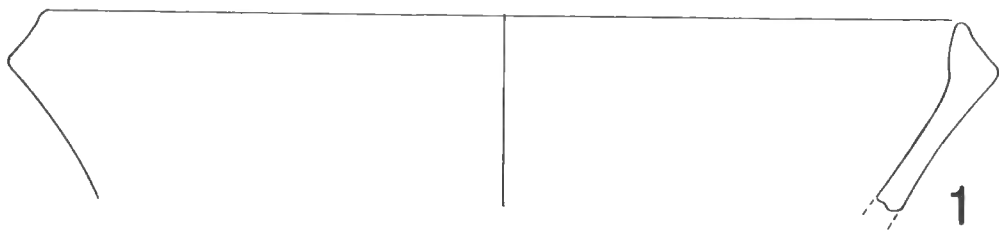


Fig.IV.3. Middle Neolithic (Karanovo III-Vesselinovo) pottery from Köprübaşı, Altiagaç and Gavurdere.

1. Köprübaşı. Medium fine fabric, brown-black in colour, burnished.
2. Köprübaşı. Medium fine fabric, black in colour, both surfaces are smoothed.
3. Köprübaşı. Medium fine fabric, reddish brown in colour, lightly burnished.
4. Kaldirim. Medium fine fabric, brown in colour, exterior lightly burnished, interior smoothed, impressed decoration on exterior.
5. Kaldirim. Fragment of a horned handle. Medium fine fabric, black in colour, burnished.
6. Köprübaşı. Fragment of a button-like handle. Medium fine fabric, grey in colour, smoothed, decorated with channelling.
7. Gavurdere. Fragment of a horned handle. Medium fine fabric, red in colour, smoothed.
8. Gavurdere. Fragment of a horned handle. Medium fine fabric, black-grey in colour, smoothed.
9. Altiagaç. Medium fine fabric, brown in colour, both surfaces are burnished.



0 1 2 3 cm

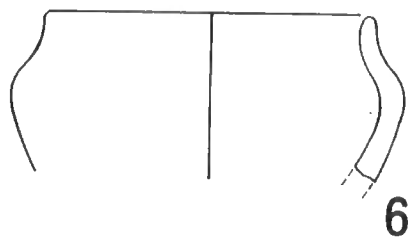
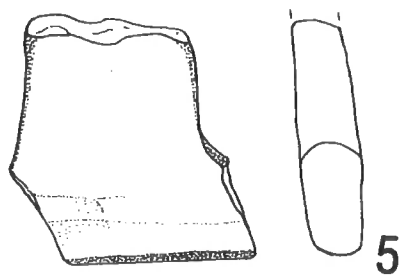
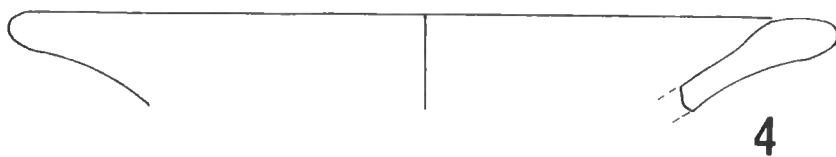
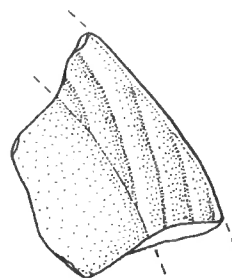


Fig.IV.4. Late Neolithic (Karanovo III-IV) pottery from Yağcili.

1. Yağcili. Medium fine fabric, greyish black in colour, both surfaces are lightly burnished.
2. Yağcili. Medium fine fabric, greyish brown interior, greyish black exterior, burnished on exterior, burnished on exterior, decorated with fluting and red paint is applied on both surfaces.
3. Yağcili. Medium fine fabric. Black interior, greyish black exterior. Both surfaces are lightly burnished, decorated with channelling.
4. Yağcili. Medium fine fabric. Black in colour. Both surfaces are lightly burnished, the interior rim is decorated with channelling.
5. Yağcili. Medium fine fabric. Grey in colour. Both surfaces are smoothed only.
6. Yağcili. Fine fabric. Black in colour, grey coloured slip on both surfaces and both surfaces are burnished.

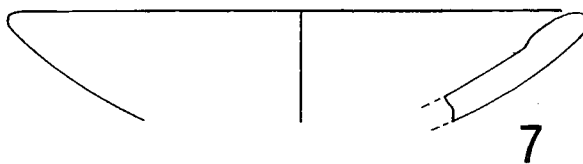
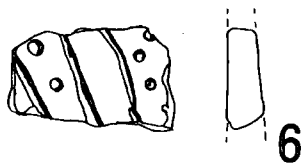
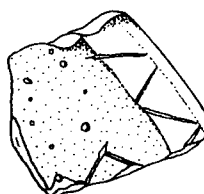
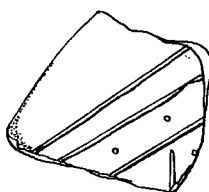
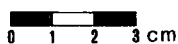
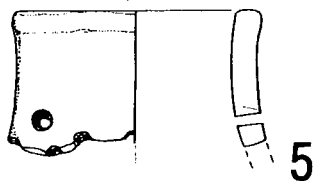
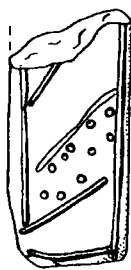
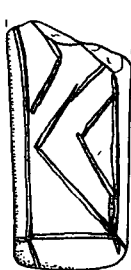
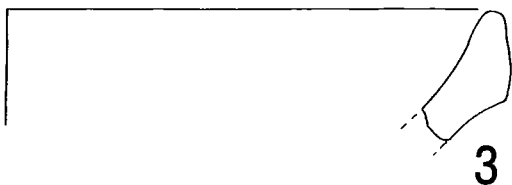
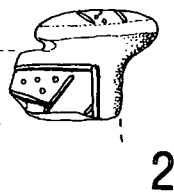
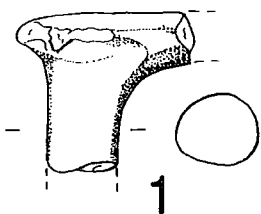
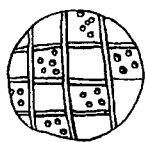
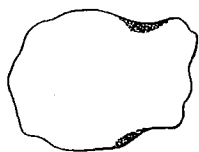
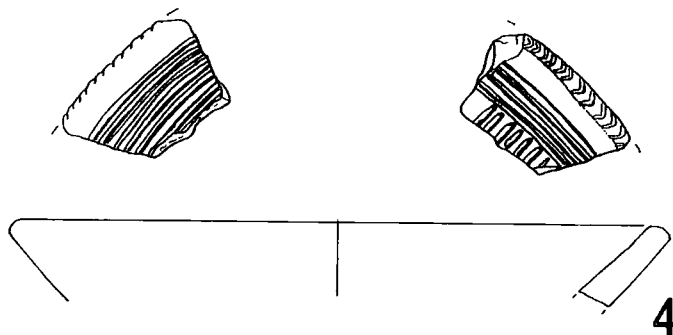
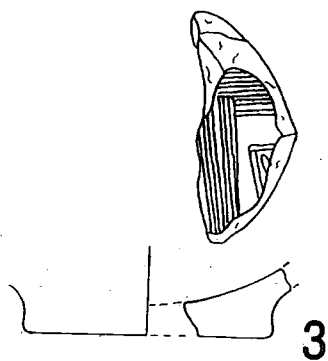
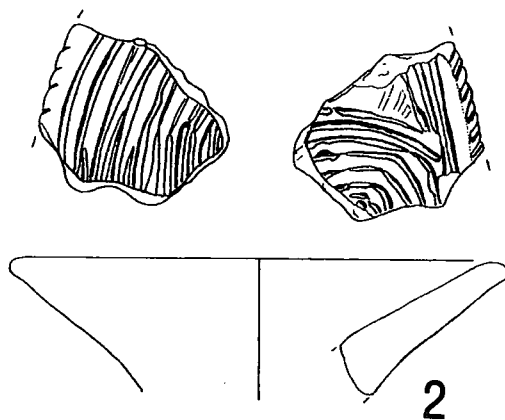
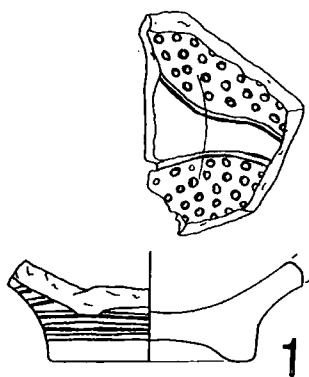


Fig.IV.5. Late Neolithic (Karanovo III-IV) pottery from Yağcili.

1. Yağcili. Fine fabric. Reddish brown in colour, burnished.
2. Yağcili. Medium fine fabric. fragment of a box, greyish black in colour, lightly burnished. Decorated with incised lines and dot impressions.
3. Yağcili. Medium fine fabric. Greyish black in colour. Burnished on exterior, interior smoothed.
4. Yağcili. Medium fine fabric, fragment of a box. black in colour, smoothed, decorated with incised lines and dot impressions.
5. Yağcili. Medium fine fabric, greyish brown in colour, both surfaces are lightly burnished.
6. Yağcili. Medium fine fabric, greyish brown in colour, lightly burnished on exterior, interior smoothed, decorated with incised lines and dot impressions.
7. Yağcili. Fine fabric, greyish black in colour, both surfaces are well burnished and decorated with incised lines and dot impressions.



0 1 2 3 cm

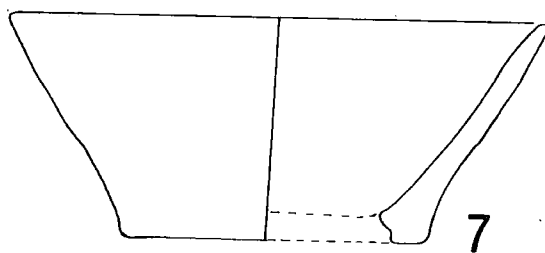
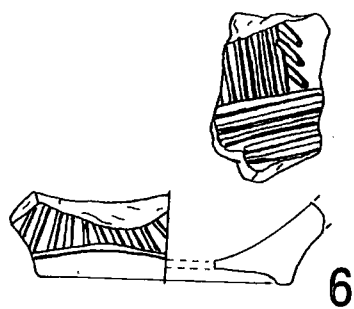
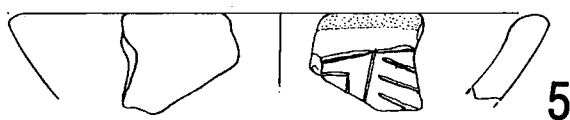


Fig.IV.6. Late Neolithic (Kalojanovec) pottery from Yağcili and Köprübaşı.

1. Yağcili. Medium fine fabric, black in colour, burnished, interior is decorated with incised lines with dot impressions, exterior is decorated with wide excised lines.
2. Yağcili. Medium fine fabric, interior reddish black, exterior reddish brown, both surfaces are smoothed and decorated with wide excised lines.
3. Köprübaşı. Medium fine fabric, greyish black in colour, smoothed, interior is decorated with wide excised lines.
4. Yağcili. Medium fine fabric, exterior greyish black, interior reddish grey, both surfaces are smoothed and decorated with wide excised lines.
5. Köprübaşı. Medium fine fabric, exterior reddish brown interior brown-black, smoothed, interior is decorated with incised lines.
6. Yağcili. Medium fine fabric, exterior greyish black, interior reddish brown, both surfaces are smoothed and decorated with wide excised lines.
7. Yağcili. Medium fine fabric, interior greyish black, exterior reddish brown, exterior is slipped and both surfaces are smoothed only.

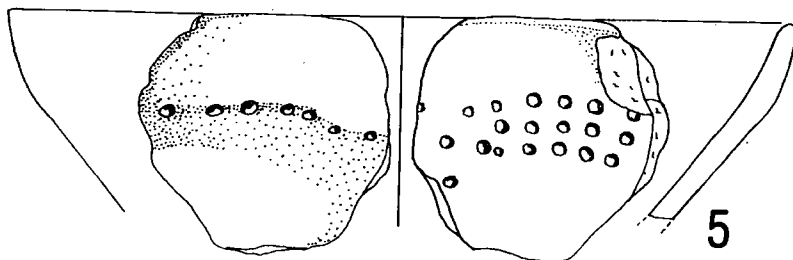
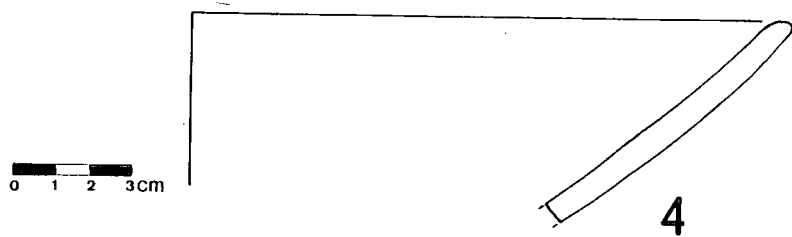
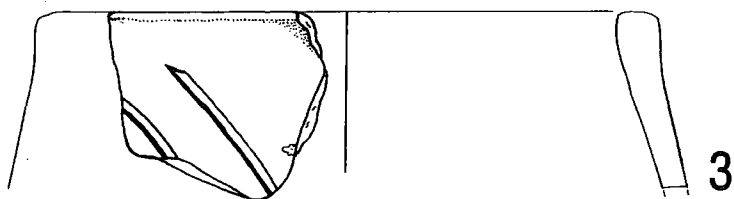
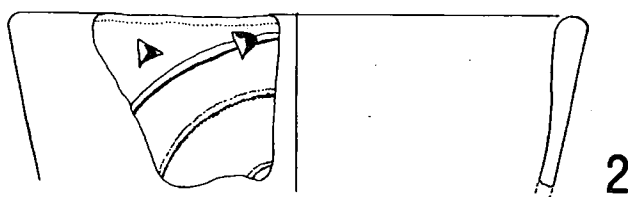
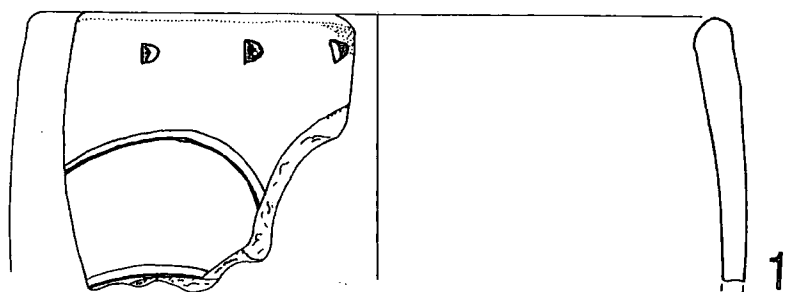
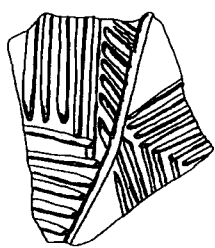
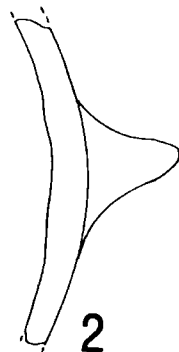
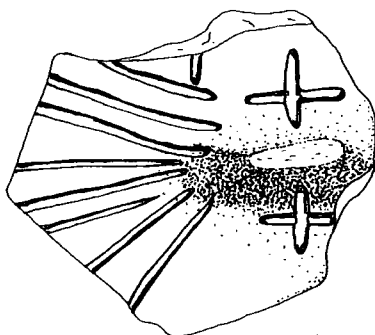


Fig.IV.7. Late Neolithic (Çardakalti) pottery from Avariz / Kumocağı.

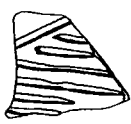
1. Kumocağı / Avariz. Medium fine fabric, exterior reddish buff, interior buff, both surfaces are smoothed, exterior is decorated with grooved lines and dot impressions.
2. Kumocağı / Avariz. Medium fine fabric, buff in colour, both surfaces are smoothed and exterior is decorated with grooved lines and dot impressions.
3. Kumocağı / Avariz. Medium fine fabric, blackish grey in colour, both surfaces are lightly burnished, exterior is decorated with grooved lines.
4. Kumocağı / Avariz. Medium fine fabric, reddish buff in colour, both surfaces are burnished.
5. Kumocağı / Avariz. Medium fine fabric, blackish grey in colour, exterior lightly burnished, interior smoothed, both surfaces are decorated with dot impressions.



1



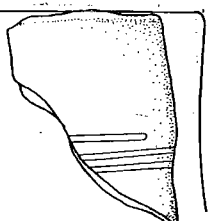
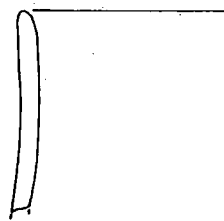
2



3



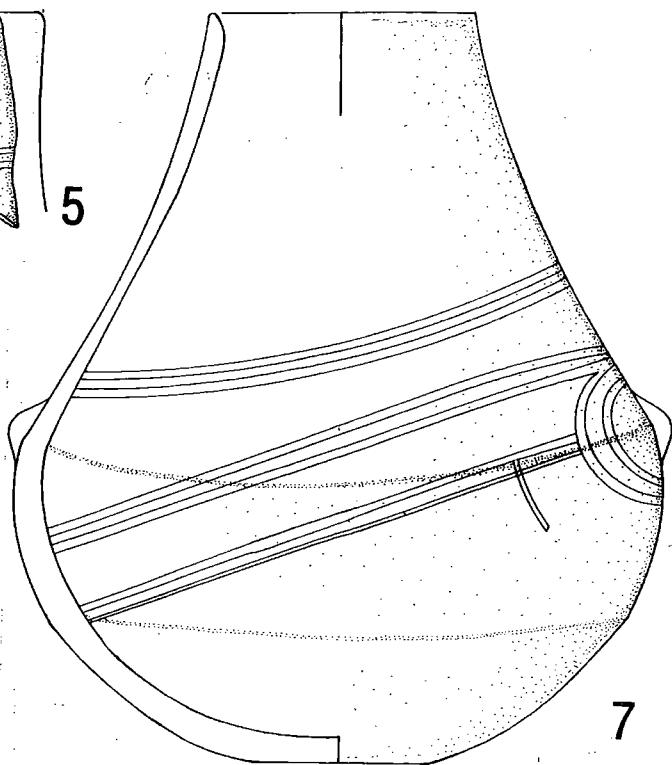
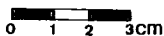
4



5



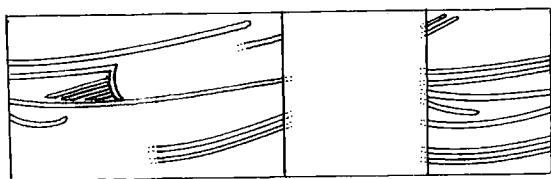
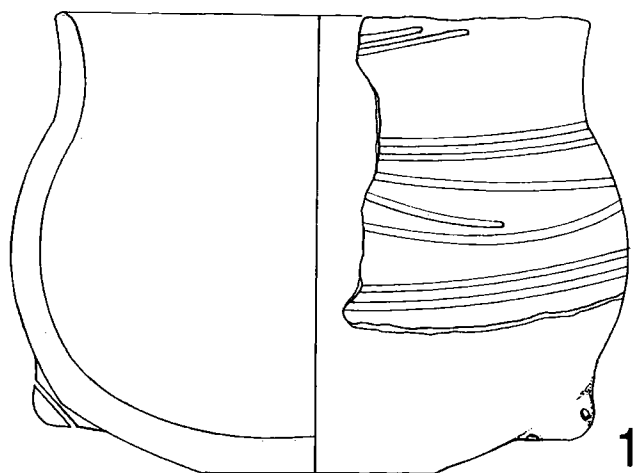
6



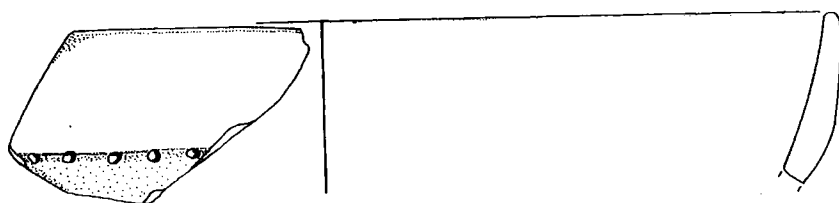
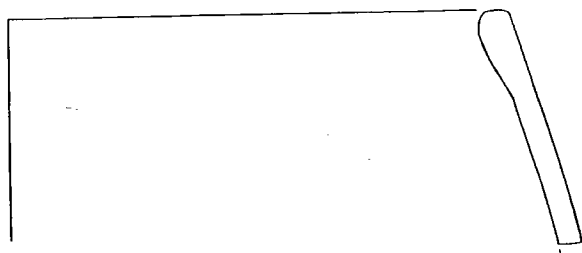
7

Fig.IV.8. Late Neolithic (Çardakalti and Kalojanovec) pottery from Avariz / Kumocaği.

1. Kumocaği / Avariz. Medium fine fabric, exterior brown-black, interior black, both surfaces are smoothed, exterior is decorated with wide excised lines.
2. Kumocaği / Avariz. Medium fine fabric, exterior reddish brown-black, interior black, both surfaces are smoothed, exterior is decorated with wide excised lines.
3. Kumocaği / Avariz. Medium fine fabric, reddish brown in colour, both surfaces is smoothed and decorated with wide excised lines.
4. Kumocaği / Avariz. Medium fine fabric, reddish buff in colour, exterior smoothed, interior lightly burnished, exterior is decorated with dot impressions.
5. Kumocaği / Avariz. Medium fine fabric, exterior black, interior red, both surfaces are lightly burnished, decorated with white paint.
6. Kumocaği / Avariz. Fine fabric, jet black in colour, burnished, decorated with white paint.
7. Kumocaği / Avariz. Medium fine fabric, black in colour, exterior buff mottled and burnished, interior smoothed only, decorated with white paint.



0 1 2 3 cm



3

Fig.IV.9. Late Neolithic (Çardakalti) pottery from Avariz / Kumocağı and Köprübaşı.

1. Kumocağı / Avariz. Medium fine fabric, black in colour, exterior lightly burnished, interior smoothed only, decorated with white paint.
2. Köprübaşı. Medium fine fabric, red-reddish buff in colour, both surfaces are smoothed.
3. Köprübaşı. Medium fine fabric, black-buff in colour, both surfaces are lightly burnished.

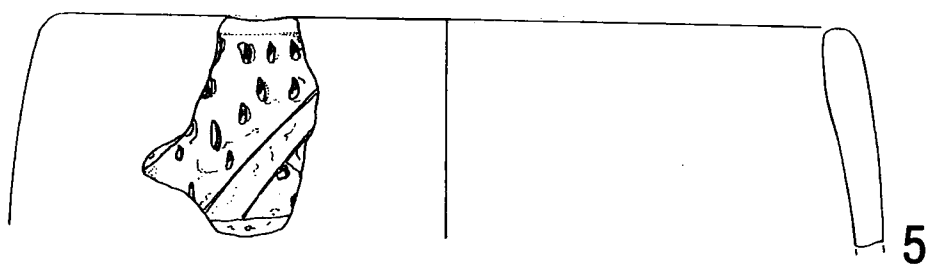
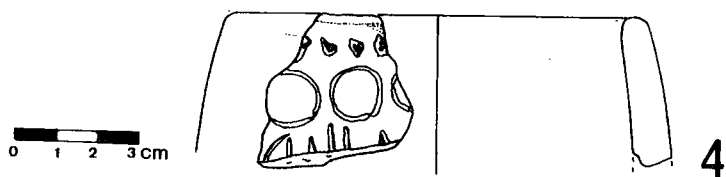
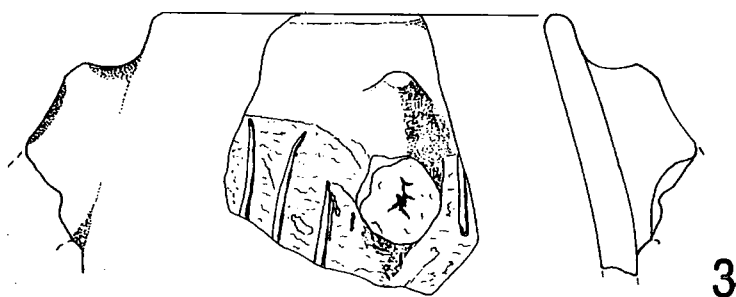
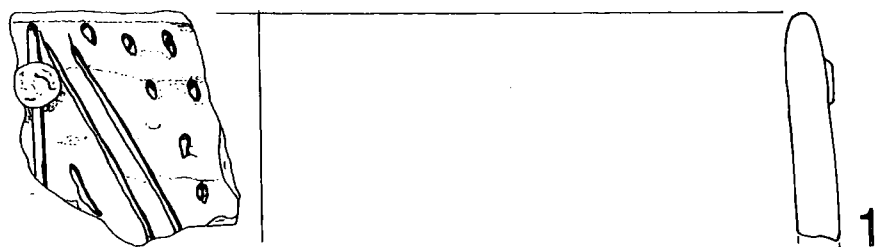
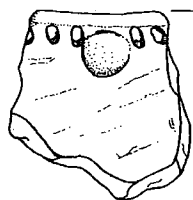
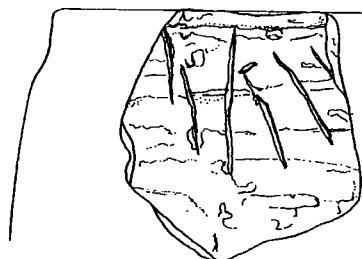


Fig.IV.10. Late Neolithic (Maslidere) pottery from Altiagaç and Değirmençeşme.

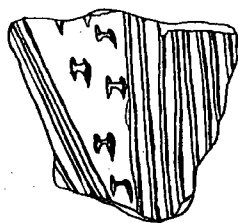
1. Altiagaç. Coarse fabric. Brown-black in colour, interior smoothed, decorated with incised lines and dot impressions.
2. Altiagaç. Coarse fabric. Brown-black in colour, interior smoothed, decorated with incised lines and dot impressions.
3. Altiagaç. Coarse fabric. Greyish buff in colour, interior smoothed, exterior below the rim is burnished, decorated with incised lines.
4. Altiagaç. Coarse fabric. Exterior greyish black interior greyish buff, interior smoothed, decorated with incised lines and dot impressions.
5. Değirmençeşme. Coarse fabric. Brown-black in colour, interior smoothed, decorated with incised lines and dot impressions.



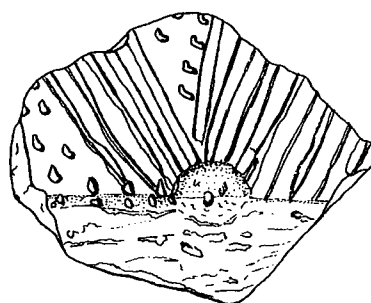
1



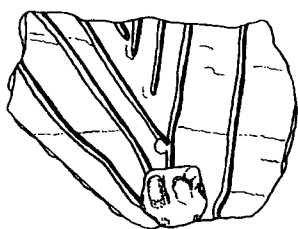
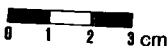
2



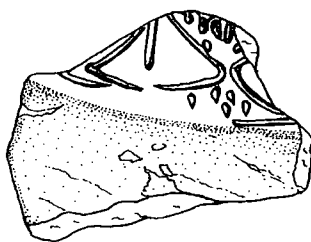
4



3



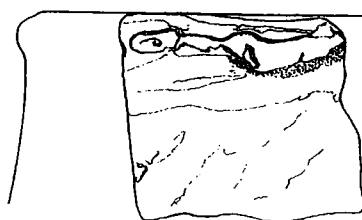
5



6



7



8

Fig.IV.11. Late Neolithic (Maslidere) pottery from Gavurdere and Altiagaç.

1. Gavurdere. Coarse fabric. Exterior buff-black, interior buff, interior smoothed, decorated with dot impressions.
2. Altiagaç. Coarse fabric. Exterior buff, interior buff-brown, interior burnished, decorated with deep excised lines.
3. Altiagaç. Coarse fabric. Exterior reddish brown, interior black-brown, interior smoothed, decorated with incised lines and dot impressions.
4. Altiagaç. Coarse fabric. Exterior brown-black, interior buff-brown, both surfaces are smoothed, decorated with incised lines and dot-like impressions.
5. Altiagaç. Coarse fabric. Exterior reddish brown, interior buff-brown, interior smoothed, decorated with incised lines.
6. Gavurdere. Coarse fabric. Exterior reddish buff, interior black, interior smoothed, decorated with incised lines and dot impressions.
7. Altiagaç. Coarse fabric. Buff in colour, interior smoothed, decorated with shell impressions.
8. Altiagaç. Coarse fabric. Reddish buff in colour, interior smoothed.

parallels for some Çardakalti forms, such as the straight-sided deep bowl. Only two Maslidere forms are known - rounded and carinated bowls. Similar examples can be found at Toptepe (Özdoğan et al. 1991).

CHALCOLITHIC POTTERY FORMS

The Chalcolithic (Pre-Cucuteni / Maritsa (=Kocatepe))

1. Open Forms

1.A. Dish

1.A.1. Straight sided dish (Fig.IV.14:1): It has rounded rim and flat bottom.

1.A.2. Straight sided dish, evenly cut on the top (Fig.IV.12:5): Always found with small cut outs at the rim.

1.B. Bowl

1.B.1. Large deep bowls with "S" profile (Fig.IV.13:2): This is a common form. It has a rounded or thinned rim and gentle profile.

2. Closed Forms

2.A. Bowl

2.A.1. Incurved rim bowl (Fig.IV.12:1-2): The walls are slightly bulging and the curve is gentle. Occasionally, there are pierced or unperforated knob-like tubular lugs on body.

2.A.2. Round-sided bowl (Fig.IV.12:4 ; Fig.IV.13:3): It has rounded rim and flaring sides, occasionally rim with projections.

2.B. Jar

2.B.1. Necked jar: It has short neck with rounded body or tall neck (Fig.IV.14:3).

3. Special Forms

3.A. High - pedestalled foot (Pot-stand) (Fig.IV.15:1-2,4-5 ; Fig.IV.16:1-4): The most characteristic form. It has conical body either straight on concave walls and a square base. Closest examples can be found at Luda Reka and Dervishov Odzhak in Southeast Bulgaria (Leshtakov 1997: Fig.9, Fig.24;1-4).

3.B. Boxes (Fig.IV.19:3-4): Footed boxes or small altars. Closest examples can be found at Dervishov Odzhak in Southeast Bulgaria (Leshtakov 1997: Fig.37). Small zoomorphic altars are characteristic for the Maritsa Culture in Bulgaria. (Todorova 1978: plate I;1,6).

3.C. Miniature vessels (Fig.IV.19:5-6): They are 3-5 cm with simple forms.

3.D. Clay spoons (Fig.IV.19:1-2).

3.E. Lids (Fig.IV.18:4-5).

Table IV.9. Forms of Pre-Cucuteni / Maritsa (=Kocatepe) pottery.

| | | % frequency, total sample |
|---|--|---------------------------|
| 1.OPEN FORMS | | |
| 1A. Dish | | |
| 1A1. Straight-sided dish | | 1.5% |
| 1A2. Straight-sided dish, evenly cut on the top | | 1.5% |
| 1B. Bowl | | |
| 1B1. Large deep bowls with "S" profile | | 6% |
| 2. CLOSED FORMS | | |
| 2A. Bowl | | |
| 2A1. Incurved rim bowl | | 3.9% |
| 2A2. Round-sided bowl | | 17.5% |
| 2B. Jar | | |
| 2B1. Necked jar | | 2.3% |
| 3. SPECIAL FORMS | | |
| 3A. High-pedestalled foot | | 62% |
| 3B. Boxes or Altars | | 1.5% |
| 3C. Miniature vessels | | 1.3% |
| 3D. Clay spoons | | 1% |
| 3E. Lids | | 1% |

Chalcolithic (Karanovo VI / Gumelnița)

1. Open Forms

1.A. Bowl

1.A.1. Shouldered bowl (Fig.IV.20:2-3 ; Fig.IV.22:1-2 ; Fig.IV.24:4 ; Fig.IV.25:1,3): It has thinned rim and straight-sided body. The mouth is broader or equal to the diameter of the body. Similar examples can be found at Karanovo VI (Hiller and Nikolov 1997: Tafel 128;11-17).

1.A.2. Carinated rim bowl: This form shows two different types; 1. Rounded rim with gentle carination (Fig.IV.25:2 ; Fig.IV.24:5 ; Fig.20:1) and 2. Thinned rim with sharp carination (Fig.IV.24:1 ; Fig.IV.25:4). Closest examples can be found at sites such as Karanovo VI (Hiller and Nikolov 1997: Tafel 130;10, Tafel 128; 21,9).

1.A.3. Round-sided bowl (Fig.IV.20:7 ; Fig.IV.22:6): It has rounded rim and flaring sides. Similar examples can be found at Karanovo VI (Hiller and Nikolov 1997: Tafel 131;13-15).

1.B. Dish

1.B.1. Straight-sided dish with plain rim (Fig.IV.24:8): It is a rare shape. Similar examples can be found at sites such as Karanovo VI (Hiller and Nikolov 1997: Tafel 132;2,3).

1.B.2. Straight-sided dish with internally thickened rim (Fig.IV.23:1 ; Fig.IV.26:2): It has either straight or slightly convex body. Closest examples can be found at sites such as Karanovo VI (Hiller and Nikolov 1997: Tafel 131;1-9).

1.C. Jar

1.C.1. Funnel-necked jar (Fig.IV.24:9): It is a very rare shape. It has a sharply out-turned rim.

1.C.2. Straight-necked jar (Fig.IV.24:7): It has a thinned rim and probably carinated body. Occasionally a strap handle links the neck and rim. The closest parallels can be found at Salcuta settlements in Western Bulgaria (Todorova 1978: Plate V;1-2).

2. Closed Form

2.A.Bowl

2.A.1. Incurved rim bowl (Fig.IV.20:4-6 ; Fig.IV.22:3-4): This form has straight-sided body and either gentle or sharp rim carination. Similar examples can be found at sites such as Karanovo VI (Hiller and Nikolov 1997: Tafel 130;1-8, 11-19,22).

2.A.2. Carinated bowl (Fig.IV.21:1,3): It has rounded or beaded rim, and a sharp carination at the body. Sometimes small knobs on carination.

2.A.3. Rounded bowl (Fig.IV.21:2 ; Fig.IV.25:8): It has flat base and convex sides, reminiscent of hole-mouth vessels. Similar examples can be found at sites such as Karanovo VI (Hiller and Nikolov 1997: Tafel 133;1, 11-21).

2.A.4. Necked bowl (Fig.IV.25:5 ; Fig.IV.23:8): It shows two types; one has a very short neck, and rounded body, the other is long necked with a rounded body and thinned rim. Similar examples can be found at Karanovo VI (Hiller and Nikolov 1997: Tafel 134;8,9,15, Tafel 132;17,18).

3. Special Forms

3.A. Lug-handles (Fig.IV.25:6-7): Big rectangular flat handles. They are probably attached to the rim of vessels. Surprisingly, similar examples can be found at the Aegean Islands sites (e.g. Emporio X-VIII: Hood 1981: Fig. 135; 331,333,334 and V-IV: Fig. 192;1308,1326).

3.B. Vessels with perforations: Similar examples can be found at Karanovo VI / Gumelnița settlements in the Balkans (e.g. Todorova 1978: Plate V;7-8).

To sum up, eleven forms were distinguished in the Kocatepe assemblages. The most frequent form is the high-pedestalled foot, representing 62.5 % of the total assemblage. No exact parallels can be found in the Balkans for this form of high-pedestalled vessel. Thirteen different forms were distinguished in Karanovo VI- Gumelnița pottery; the most frequent forms are carinated and shouldered bowls. The closest parallels for Karanovo VI- Gumelnița forms can be widely found in the Balkans (cf. Karanovo VI: Hiller and Nikolov 1997).

Table IV.10. Forms of Karanovo VI / Gumelnița pottery.

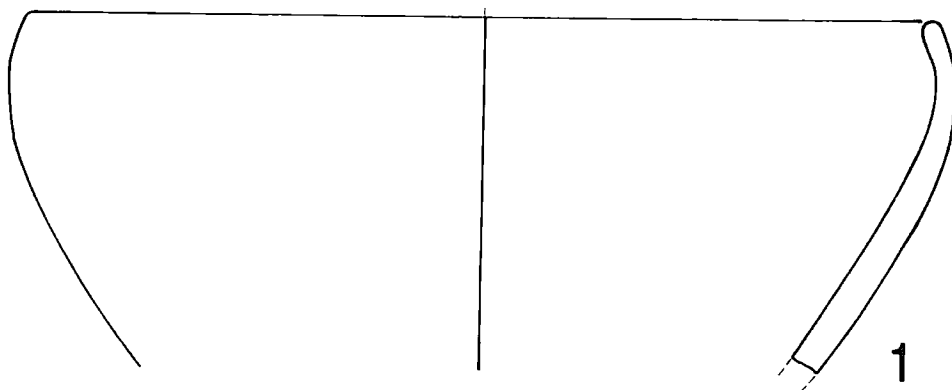
| | % frequency, total sample |
|--|---------------------------|
| 1.OPEN FORMS | |
| 1A. Bowl | |
| 1A1. Shouldered bowl | 18% |
| 1A2. Carinated rim bowl | 19% |
| 1A3. Round-sided bowl | 5% |
| 1B. Dish | |
| 1B1. Straight-sided dish with plain rim | 5% |
| 1B2. Straight-sided dish with internally thickened rim | 5% |
| 1C. Jar | |
| 1C1. Funnel-necked jar | 14% |
| 1C2. Straight necked jar | 5% |
| 2. CLOSED FORMS | |
| 2A. Bowl | |
| 2A1. Incurved rim bowl | 8% |
| 2A2. Carinated bowl | 15% |
| 2A3. Rounded bowl | 6% |
| 2A4. Necked bowl | 7% |
| 3. SPECIAL FORMS | |
| 3A. Lug-handles | 2% |
| 3B. Vessels with perforations | 4% |

IV.B.3.4. Decoration and Design

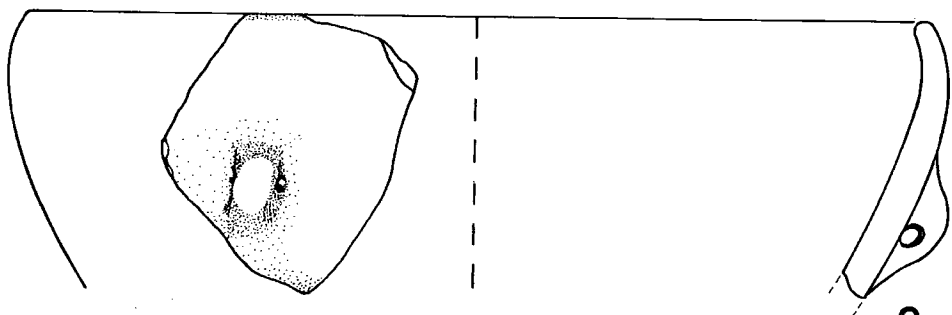
Early Neolithic pottery (Hamaylitarla): Decoration is almost absent. Only relief bands occur (Fig.IV.1:8). Similar examples can be found at sites such as Nea Nikomedeia (Pyke and Yiouni 1996: Fig.5.53;3,5,9).

Middle Neolithic pottery (Karanovo III-Vesselinovo): A number of different decorative techniques occur, such as channelling, incision and impression. The technique of channelling (or fluting or rippling) occurs on straight-sided dishes with thickened rim. The interior-rim is decorated with channels that are set vertically or obliquely. The upper part of some carinated bowls is also decorated with channelling. In one example, channelling occurs on a knob handle (Fig.IV.3:6). Incised decoration was found on boxes. Rounded bowls are decorated with finger impressed relief bands on the rim, sometimes on the body. The whole body are decorated with nail impressions or sometimes stroke-like impressions made with a stick (Fig.IV.3.4). Similar decorative techniques can be found at Karanovo III sites, such as Karanovo (Hiller and Nikolov 1997: Tafel 11;21-22 ; Tafel 13:13-14).

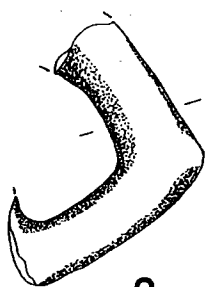
Late Neolithic pottery (Karanovo III-IV / Aşağı Pınar 3): Decoration is common, with several techniques represented. Channelling is the most common technique. The interior rims of straight-sided dishes are decorated with this technique (Fig.IV.4.4). They are set at an oblique angle. Occasionally the whole interiors of the bowls are decorated in this technique. Channelling is also used on necks of tall-necked jars. They are set vertically.



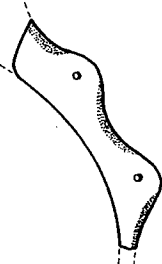
1



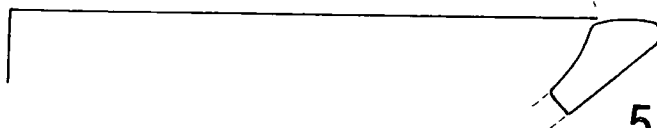
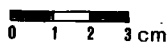
2



3



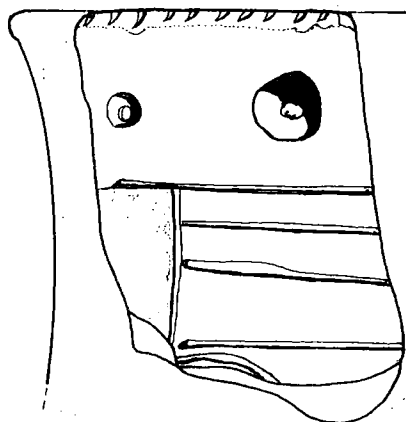
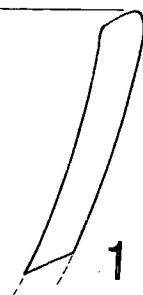
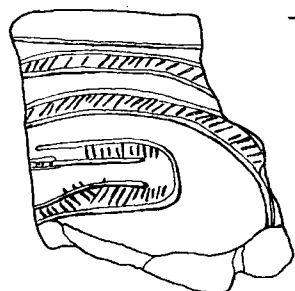
4



5

Fig.IV.12. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavakli 2, Kocatepe and Karabaş.

1. Kavakli 2. Medium fine fabric, greyish black in colour, lightly burnished on exterior, interior smoothed.
2. Kocatepe. Medium fine fabric, black-greyish black in colour, burnished on exterior, interior smoothed.
3. Karabaş. A handle. Medium fine fabric, reddish buff in colour, smoothed.
4. Kocatepe. Medium fine fabric, Black-buff in colour, burnished on exterior, interior smoothed.
5. Kavakli 2. Greyish buff in colour, both surfaces are smoothed.



0 1 2 3 cm

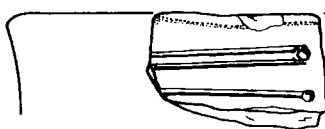
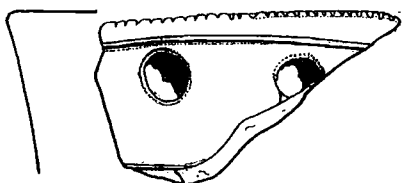
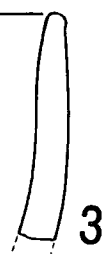
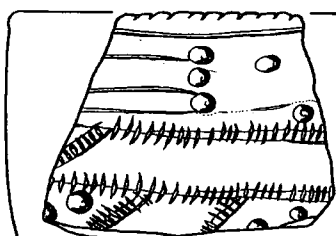
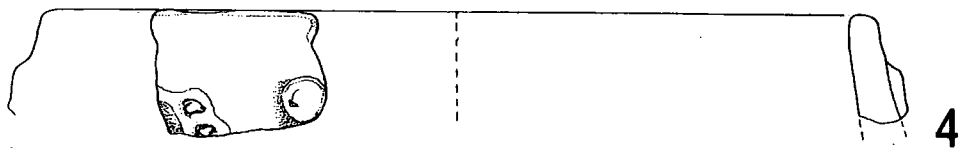
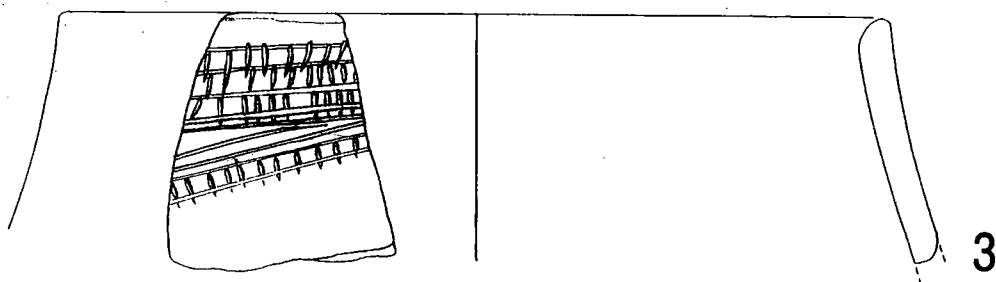
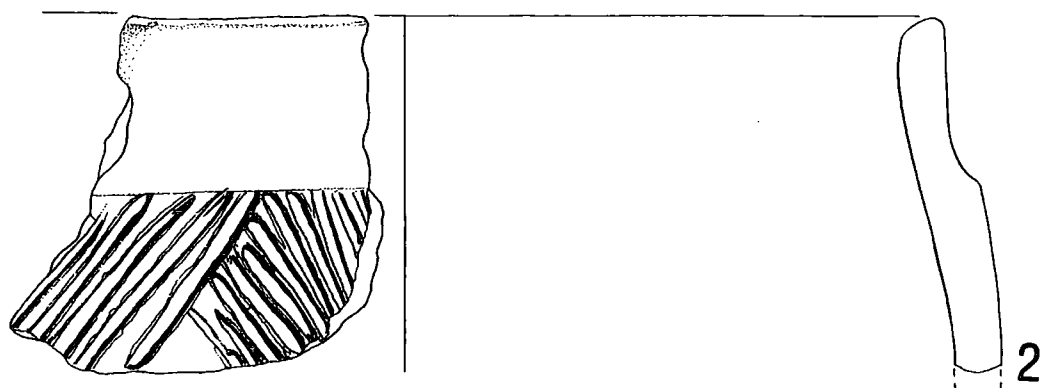
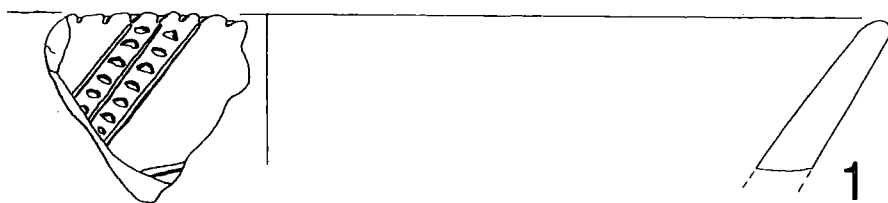


Fig.IV.13. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani and Karabaş.

1. Karabaş. Medium fine fabric greyish buff in colour, both surfaces are smoothed, decorated with incised lines.
2. Karabaş. Medium fine fabric reddish brown-black in colour, both surfaces are smoothed, decorated with incised lines, dot impression and red paint.
3. Tepeyani. Medium fine fabric, greyish black in colour, burnished on exterior, interior smoothed, decorated with incised lines and dot impressions.
4. Karabaş. Medium fine fabric, grey exterior, greyish black interior, burnished on exterior, interior smoothed, decorated with incised lines and dot impressions.
5. Tepeyani. Medium fine fabric, reddish buff in colour, burnished on exterior, interior smoothed, decorated with incised lines and dot impressions.



0 1 2 3 cm

Fig.IV.14. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavakli 2, Tepeyani and Karabaş.

1. Kavakli 2. Medium fine fabric, exterior, reddish buff, interior red, both surfaces are smoothed, decorated with incised lines.
2. Karabaş. Medium fine fabric, grey in colour, both surfaces are smoothed, burnished only below the rim, decorated with wide excised lines.
3. Tepeyani. Medium fine fabric, greyish black in colour, both surfaces are smoothed, decorated with incised lines.
4. Kavakli 2. Medium fine fabric, red in colour, both surfaces is smoothed, decorated with bands in relief.

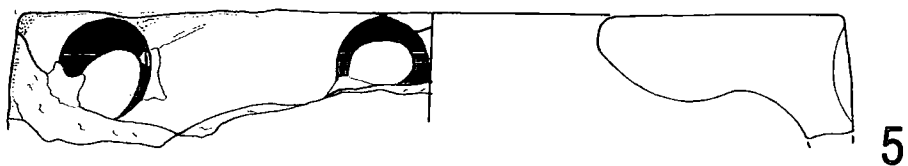
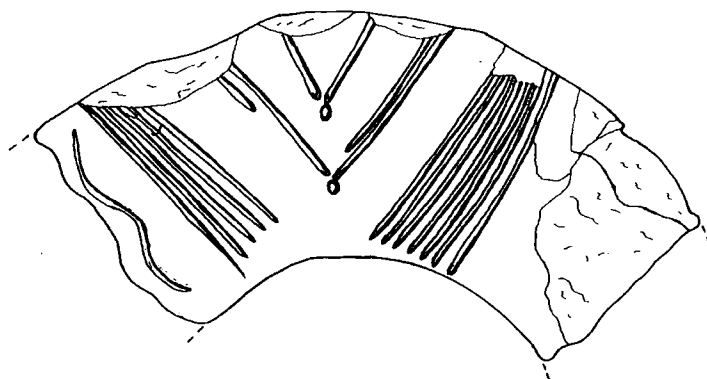
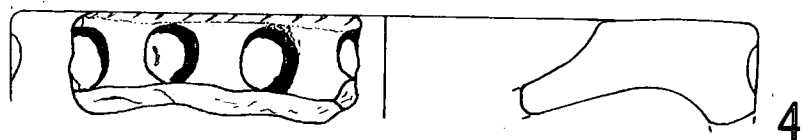
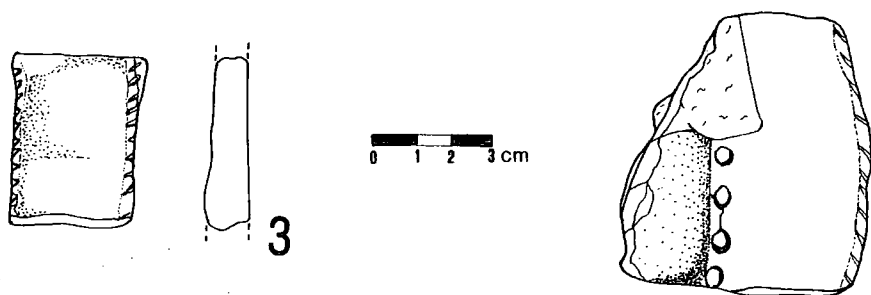
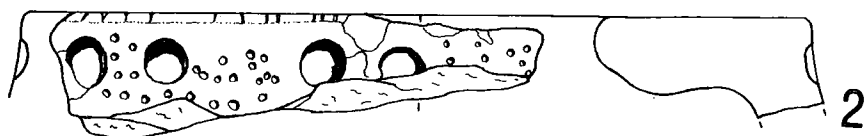
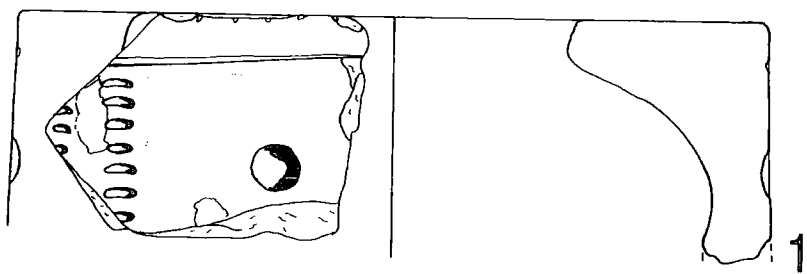
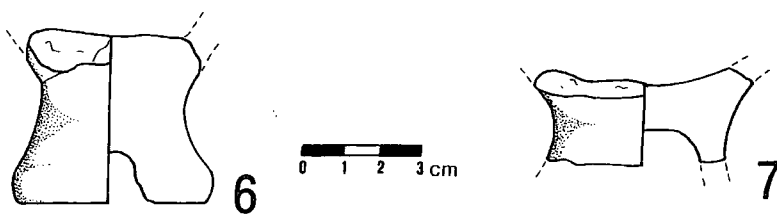
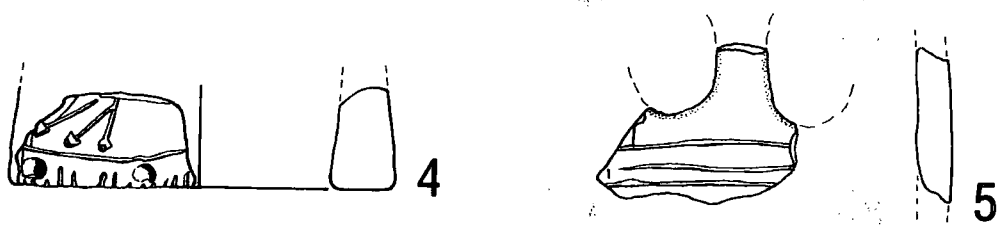
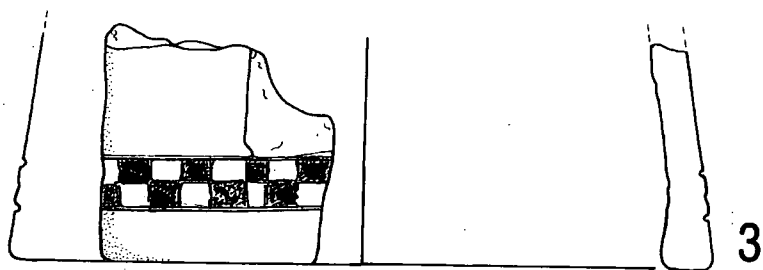
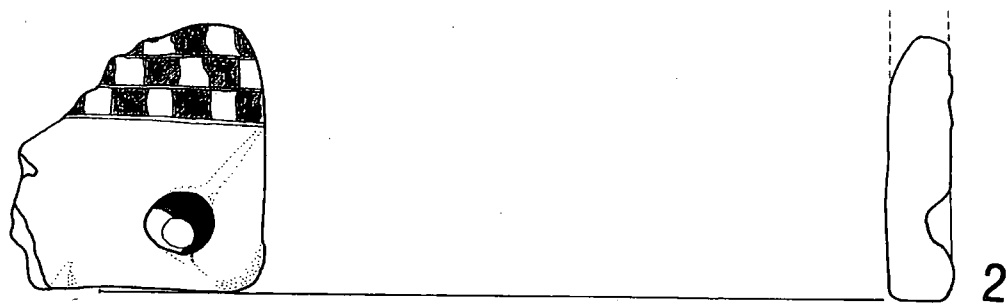


Fig.IV.15. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Kocatepe and Karabaş.

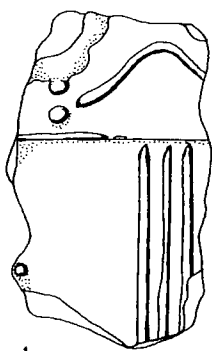
1. Kocatepe. Fragment of high-pedestalled foot. Medium fine fabric, exterior grey, interior greyish black, burnished on exterior, decorated with incised lines, dot impressions and red paint.
2. Tepeyani. Fragment of high-pedestalled foot. Medium fine fabric, greyish black in colour, burnished on exterior, decorated with dot impressions.
3. Tepeyani. Fragment of high-pedestalled foot. Medium fine fabric, greyish black in colour, smoothed on exterior.
4. Karabaş. Fragment of high-pedestalled foot. Medium fine fabric, greyish black in colour, smoothed on exterior, decorated with dot impressions.
5. Karabaş. Fragment of high-pedestalled foot. Medium fine fabric, Greyish black in colour, smoothed on exterior, decorated with incised lines and dot impressions.



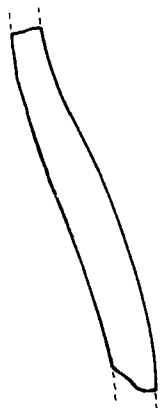
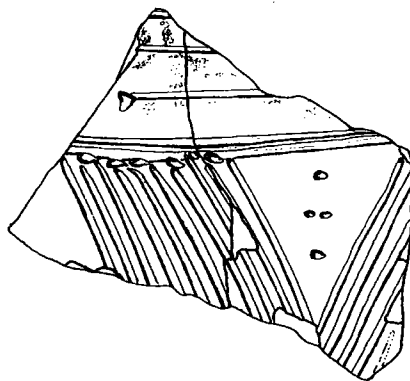
0 1 2 3 cm

Fig.IV.16. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Yumurta Tepe and Karabaş.

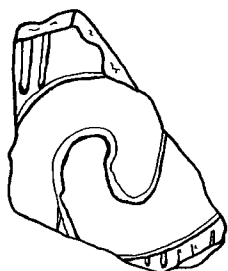
1. Tepeyani. Fragment of high-pedestalled foot. Medium fine fabric, black in colour, both surfaces is smoothed, decorated with incised lines and dot impressions.
2. Yumurta Tepe. Fragment of high-pedestalled foot. Medium fine fabric, exterior, greyish black-buff, interior black, both surfaces are smoothed, decorated with cut-outs and dot impression.
3. Karabaş. Fragment of high-pedestalled foot. Medium fine fabric, grey in colour, smoothed on exterior, decorated with cut-outs.
4. Tepeyani. Fragment of high-pedestalled foot. Medium fine fabric, reddish buff in colour, both surfaces is smoothed, decorated with incised lines and dot impressions.
5. Tepeyani. Fragment of high-pedestalled foot. Medium fine fabric, greyish black in colour, smoothed on exterior, decorated with incised lines.
6. Tepeyani. Medium fine fabric, greyish buff in colour.
7. Karabaş. Medium fine fabric, greyish black in colour.



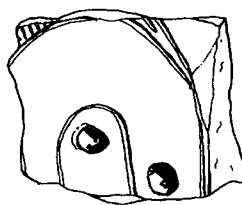
1



2

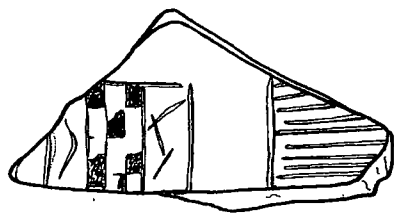


3

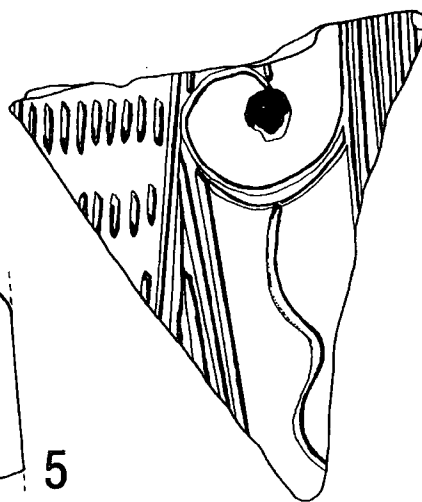


4

0 1 2 3 cm



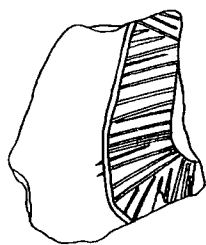
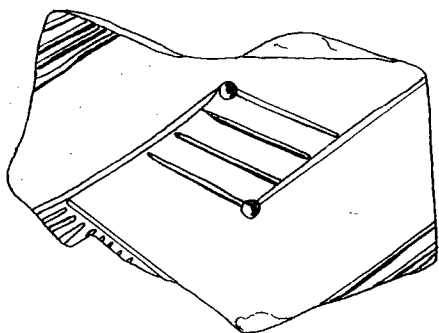
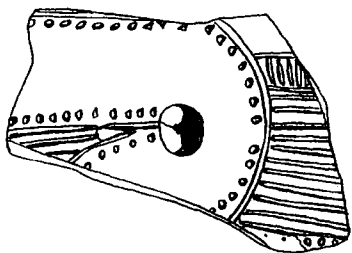
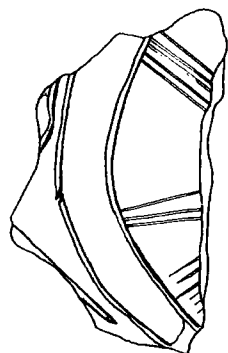
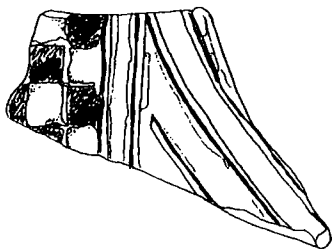
5



6

Fig.IV.17. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavakli 2, Kocatepe, Tepeyani, Yumurta Tepe and Karabaş.

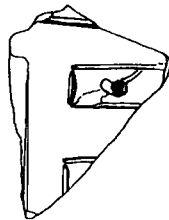
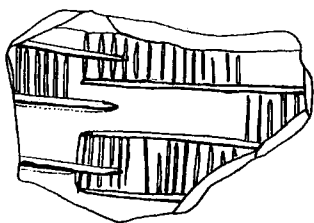
1. Yumurta Tepe. Medium fine fabric, buff-brown in colour, both surfaces are smoothed, decorated with incised lines and dot impressions.
2. Kocatepe. Medium fine fabric, greyish black in colour, both surfaces are smoothed, decorated with incised lines, dot impressions and red paint.
3. Kavakli 2. Medium fine fabric, black in colour, smoothed on exterior, decorated with incised lines.
4. Kocatepe. Medium fine fabric, exterior black, interior grey, both surfaces are smoothed, decorated with incised lines and dot impressions.
5. Tepeyani. Medium fine fabric, greyish black in colour, smoothed on exterior, decorated with incised lines and excised cut-outs.
6. Karabaş. Medium fine fabric, grey in colour, smoothed on exterior, decorated with incised lines and dot impressions.



5



0 1 2 3 cm

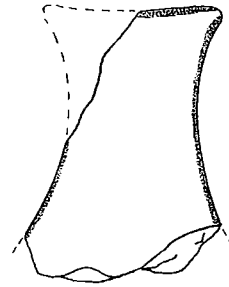
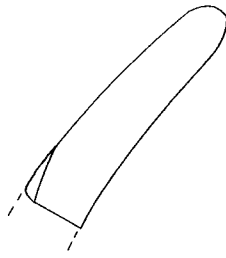
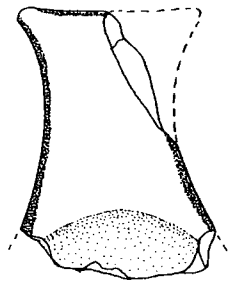


6

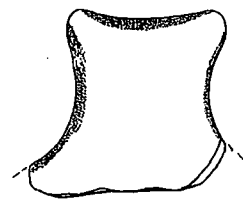
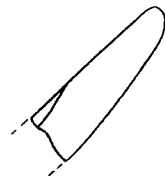
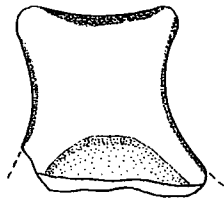
7

Fig.IV.18. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kavakli 2, Kocatepe, Arpaç and Karabaş.

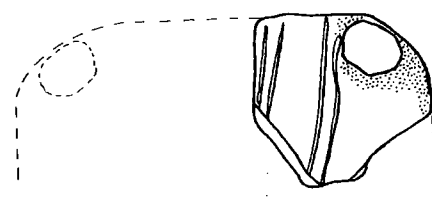
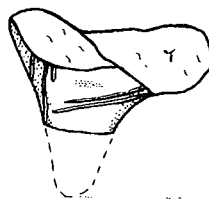
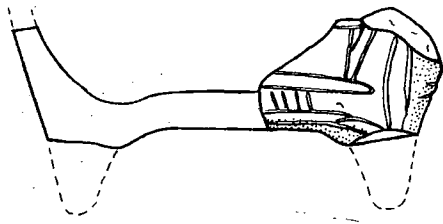
1. Arpaç. Medium fine fabric, black in colour, both surfaces are smoothed, decorated with deep excised lines and cut-outs.
2. Karabaş. Medium fine fabric, buff-black in colour, smoothed on exterior, decorated with incised lines and dot impressions.
3. Karabaş. Medium fine fabric, exterior grey-buff, interior grey, smoothed on exterior, decorated with incised lines and dot impressions.
4. Kocatepe. Fragment of a lid. Medium fine fabric, reddish buff in colour, smoothed on exterior, decorated with incised lines.
5. Arpac. Fragment of a lid. Medium fine fabric, exterior reddish brown-black, interior red, both surfaces are smoothed, decorated with incised lines.
6. Kavakli 2. Medium fine fabric, black in colour, smoothed on exterior, decorated with incised lines.
7. Kavakli 2. Medium fine fabric, exterior reddish brown-black, interior black, smoothed on exterior, decorated with incised lines and dot impressions.



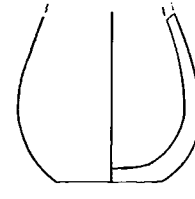
1



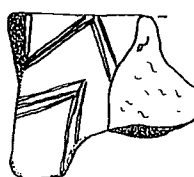
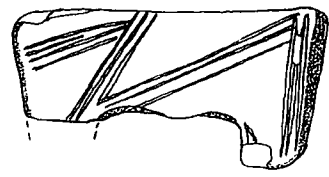
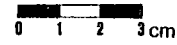
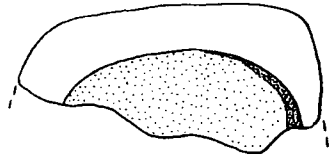
2



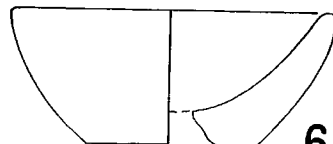
3



5



4



6

Fig.IV.19. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Tepeyani, Yumurta Tepe and Karabaş.

1. Karabaş. Fragment of a spoon. Medium fine fabric, reddish buff in colour, smoothed.
2. Yumurta Tepe. Fragment of a spoon. Medium fine fabric, black-brown in colour, smoothed.
3. Tepeyani. Fragment of a box. Medium fine fabric, smoothed, decorated with incised lines.
4. Karabaş. Fragment of a box. Medium fine fabric, reddish buff in colour, smoothed, decorated with incised lines.
5. Karabaş. A miniature vessel. Medium fine fabric, buff in colour, smoothed.
6. Karabaş. A miniature vessel. Medium fine fabric, exterior reddish buff, interior black, smoothed.

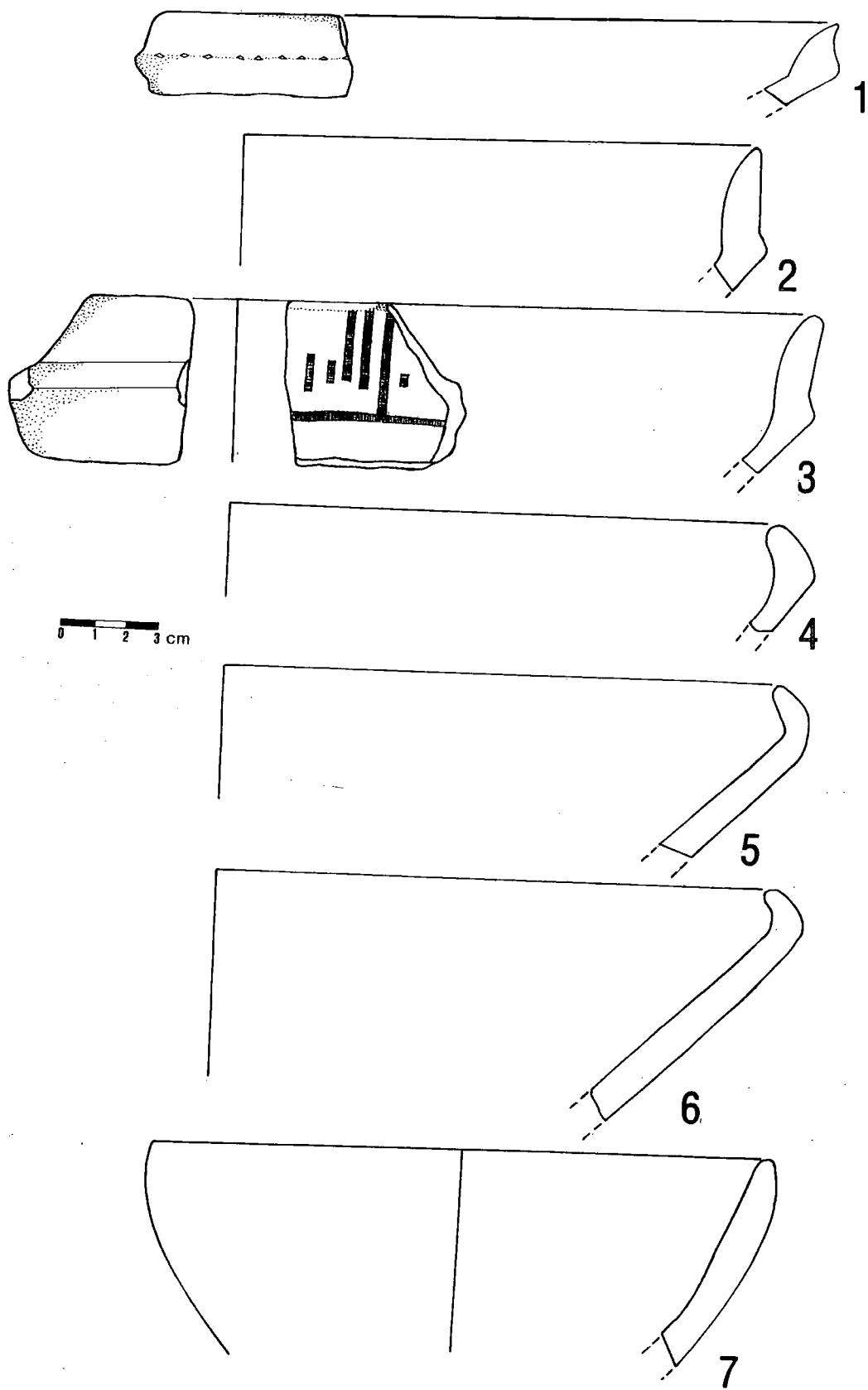
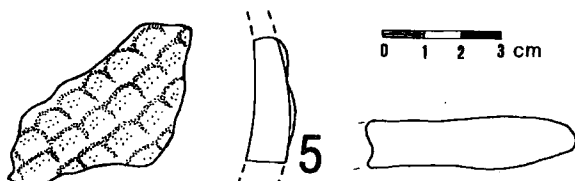
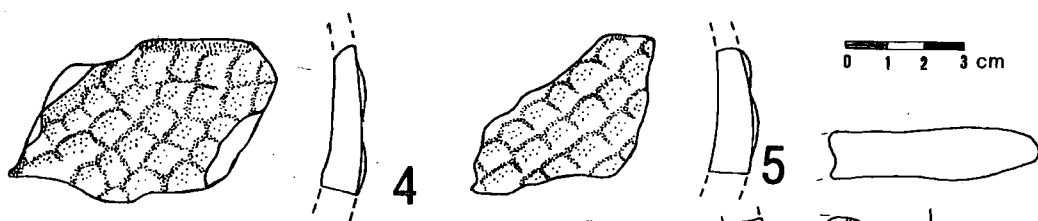
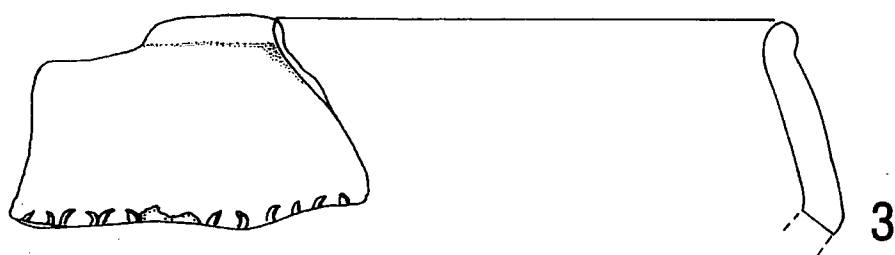
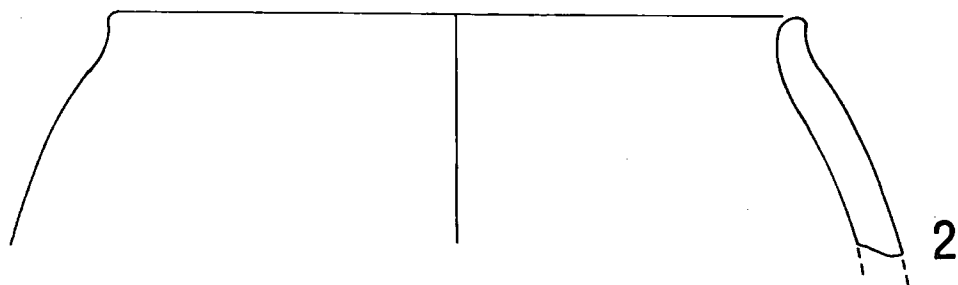
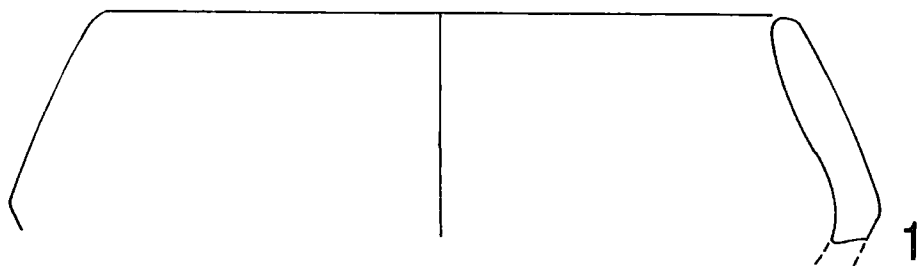


Fig.IV. 20. Chalcolithic (Karanovo VI- Gumelnita) pottery from Yumurta Tepe.

1. Yumurta Tepe. Medium fine fabric, black in colour, burnished on interior, exterior smoothed, below the rim is also lightly burnished.
2. Yumurta Tepe. Medium fine fabric, black in colour, burnished on exterior, interior smoothed, black coloured slip on exterior.
3. Yumurta Tepe. Medium fine fabric, black in colour, buff mottling on both surfaces, burnished on interior, exterior well smoothed, decorated with graphite paint on interior.
4. Yumurta Tepe. Medium fine fabric, black in colour, burnished on interior, exterior smoothed.
5. Yumurta Tepe. Medium fine fabric, black in colour, burnished on interior, exterior smoothed.
6. Yumurta Tepe. Medium fine fabric, black in colour, both surfaces are well smoothed.
7. Yumurta Tepe. Coarse fabric, brown in colour, both surfaces are untreated.



0 1 2 3 cm

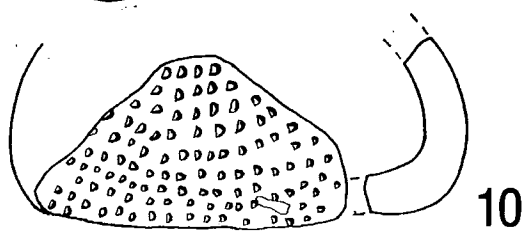
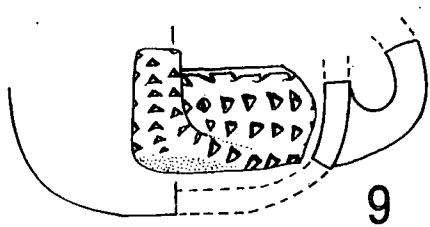
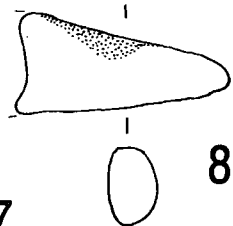
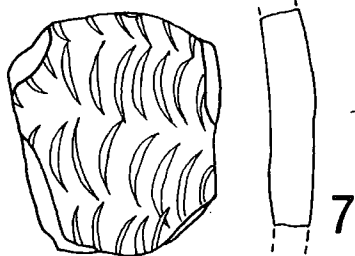
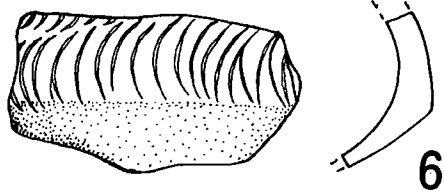


Fig.IV.21. Chalcolithic (Karanovo VI-Gumelnita) pottery from Yumurta Tepe.

1. Yumurta Tepe. Medium fine fabric, brown in colour, burnished on exterior, interior smoothed, black coloured slip on exterior.
2. Yumurta Tepe. Medium fine fabric, black in colour, burnished on exterior, interior smoothed.
3. Yumurta Tepe. Medium fine fabric, Reddish brown in colour, burnished on exterior, interior smoothed, decorated with dot impressions.
4. Yumurta Tepe. Medium fine fabric, black in colour, both surfaces are smoothed, decorated with concentric incised bands.
5. Yumurta Tepe. Medium fine fabric, black in colour, both surfaces are smoothed, decorated with concentric incised bands.
6. Yumurta Tepe. Medium fine fabric, black in colour, both surfaces are smoothed, decorated with shell impressions.
7. Yumurta Tepe. Medium fine fabric, brown in colour, both surfaces are smoothed, decorated with shell impressions.
8. Yumurta Tepe. Medium fine fabric, buff in colour, part of a ledge handle.
9. Yumurta Tepe. Medium fine fabric, brown in colour, both surfaces are smoothed, decorated with small triangular impressions.
10. Yumurta Tepe. Medium fine fabric, buff in colour, both surfaces are smoothed, decorated with dot impressions.

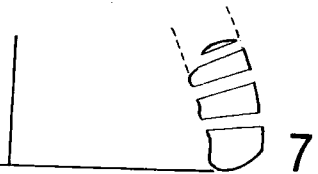
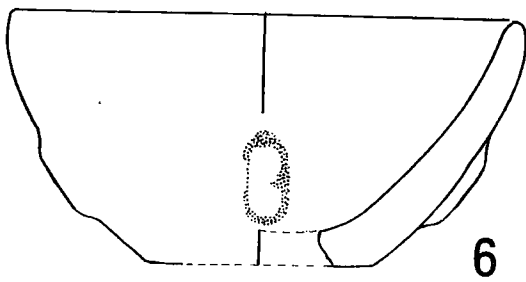
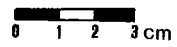
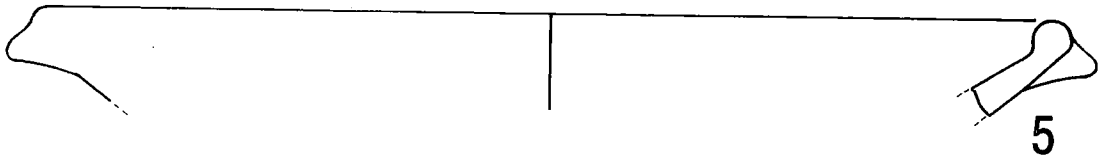
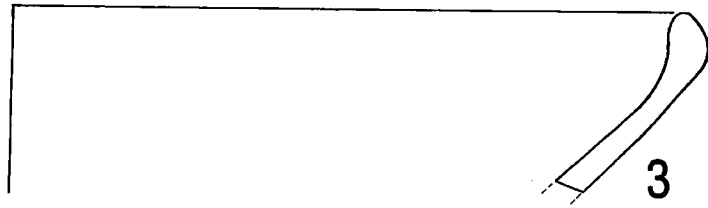
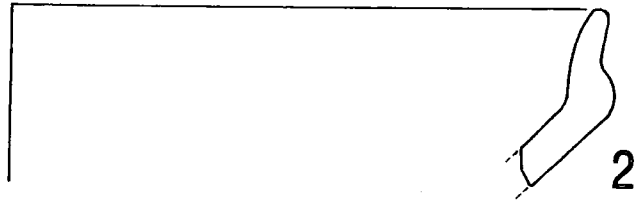
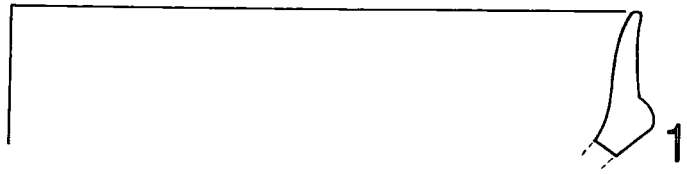
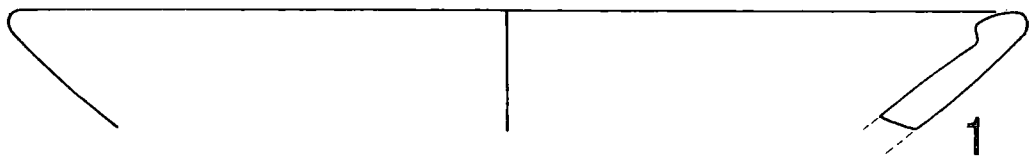
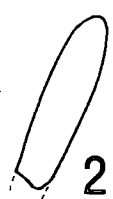
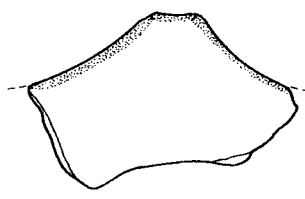


Fig.IV.22. Chalcolithic (Karanovo VI-Gumelnita) pottery from Tepeyani.

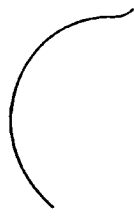
1. Tepeyani. Medium fine fabric, black in colour, red mottling on both surfaces, smoothed and burnished.
2. Tepeyani. Medium fine fabric, black in colour, smoothed and burnished.
3. Tepeyani. Fine fabric, exterior grey, interior black, red paint on both surfaces, smoothed and burnished.
4. Tepeyani. Medium fine fabric, exterior grey interior grey-buff, smoothed and burnished.
5. Tepeyani. Medium fine fabric, thick black slip on both surface, exterior burnished.
6. Tepeyani. Medium fine fabric, reddish buff in colour, interior burnished, exterior smoothed.
7. Tepeyani. Fragment of a perforated vessel. Grey-buff in colour, exterior smoothed.



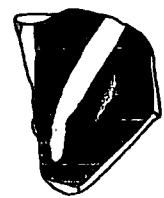
1



2



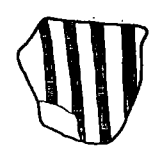
3



4



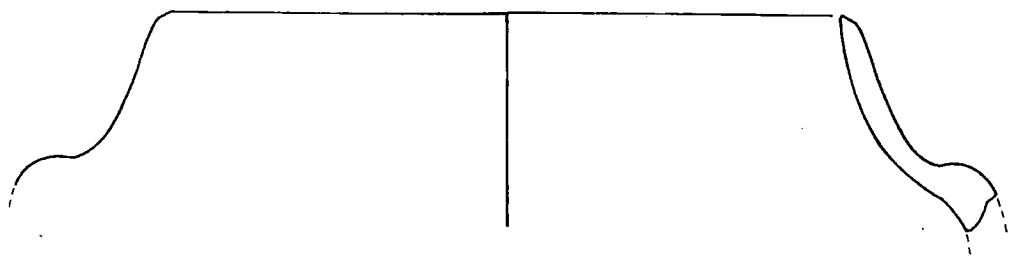
5



6



7



8

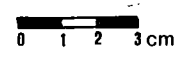
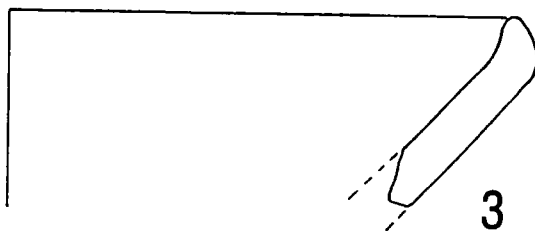
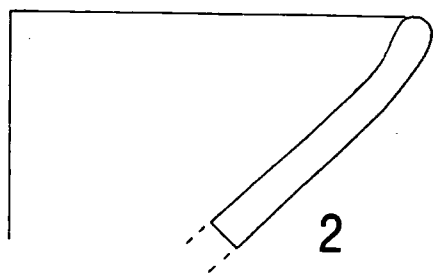


Fig.IV.23. Chalcolithic (Karanovo VI-Gumelnita) pottery from Tepeyani and Kavakli 1.

1. Tepeyani. Medium fine fabric, buff in colour, exterior burnished, interior smoothed, red paint on interior.
2. Tepeyani. Lug handle. Medium fine fabric, red slip on black surface, both surfaces are smoothed only.
3. Tepeyani. Medium fine fabric, reddish buff slip on exterior, interior buff, exterior lightly burnished.
4. Tepeyani. Fine fabric, buff in colour, dark brown slip on interior, interior is burnished and decorated with graphite paint, exterior smoothed only.
5. Tepeyani. Fine fabric, jet black in colour, both surfaces are burnished and decorated with white paint.
6. Tepeyani. Medium fine fabric, exterior greyish black, interior black, both surfaces are smoothed, decorated with shell impressions.
7. Tepeyani. Medium fine fabric, greyish black in colour, both surfaces are smoothed, decorated with incised lines.
8. Kavakli 1. Medium fine fabric, exterior grey, interior greyish black, both surfaces are smoothed and lightly burnished, interior is decorated with grooved lines.



0 1 2 3 cm

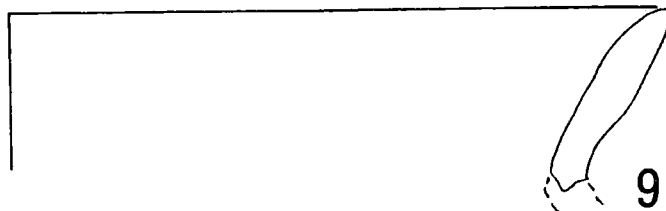
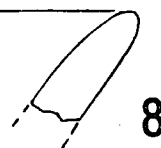
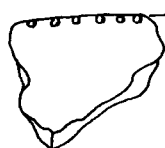
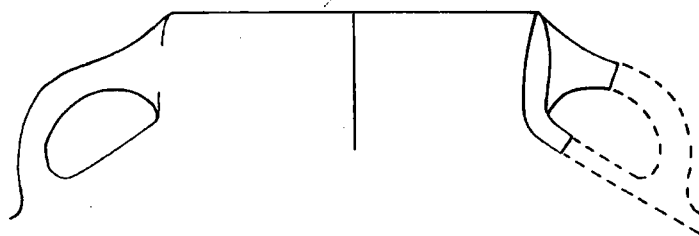
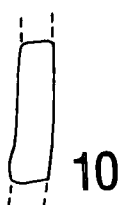
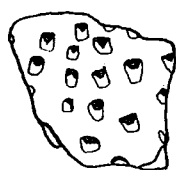
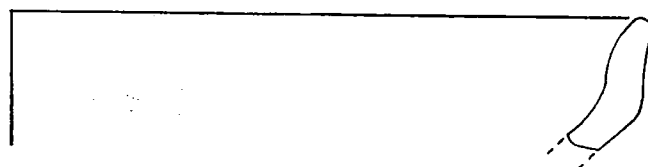
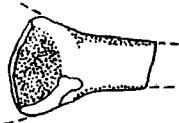


Fig.IV.24. Chalcolithic (Karanovo VI-Gumelnita) pottery from Kavakli 1.

1. Kavakli 1. Fine fabric, grey exterior, greyish black interior, burnished on interior, exterior well smoothed.
2. Kavakli 1. Medium fine fabric, Reddish buff slipped, both surfaces are smoothed.
3. Kavakli 1. Medium fine fabric, buff in colour, both surfaces are smoothed.
4. Kavakli 1. Fine fabric, black in colour, burnished on exterior, interior smoothed, decorated with graphite paint.
5. Kavakli 1. Medium fine fabric, grey in colour, part of a ledge handle.
6. Kavakli 1. Fine fabric, buff slipped, burnished on exterior, interior well smoothed.
7. Kavakli 1. Medium fine fabric, black exterior, reddish buff interior, both surfaces are smoothed, decorated with dot impression.
8. Kavakli 1. Fine fabric, buff slipped, burnished on exterior, interior well smoothed.
9. Kavakli 1. Medium fine fabric, black in colour, both surfaces are smoothed, decorated with shell impression.
10. Kavakli 1. Medium fine fabric, buff in colour, both surfaces are smoothed, decorated with dot impression.
11. Kavakli 1. Fine fabric, reddish buff in colour, burnished on interior, exterior smoothed, decorated with incisions.
12. Kavakli 1. Medium fine fabric, brown exterior, grey interior, smoothed and lightly burnished.

0 1 2 3 cm

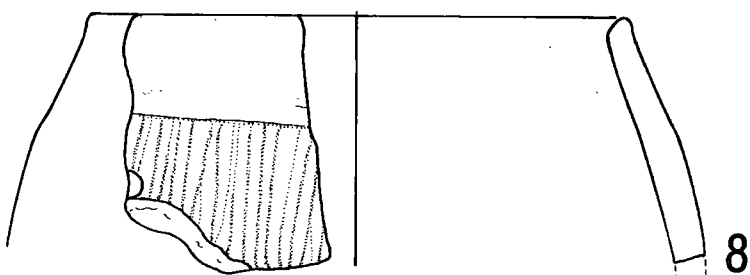
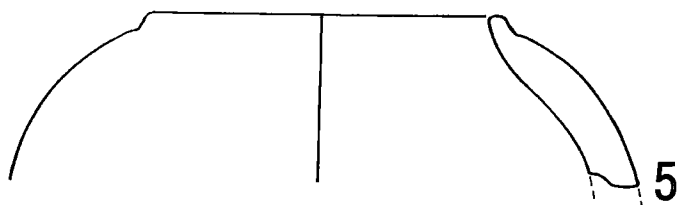
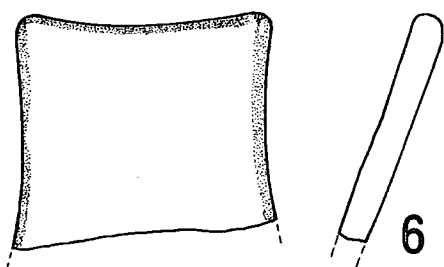
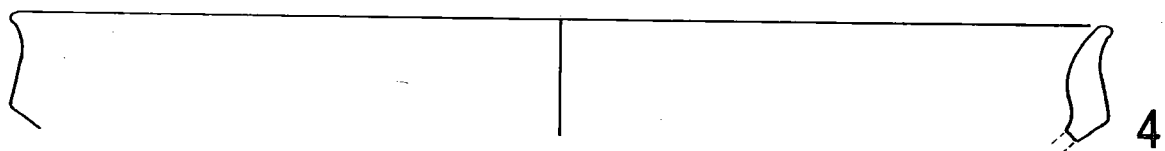
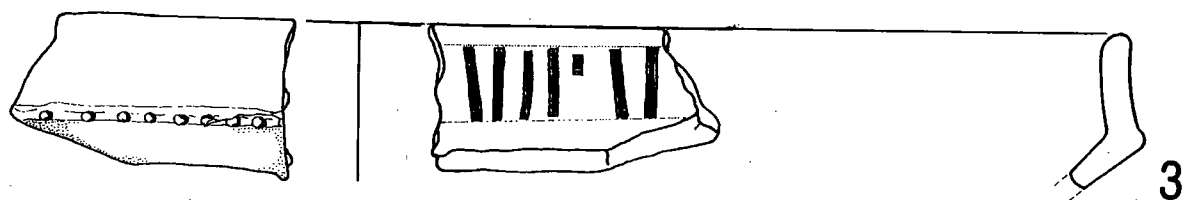
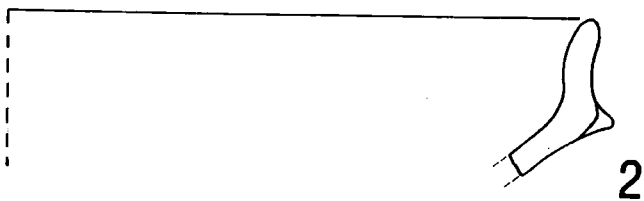
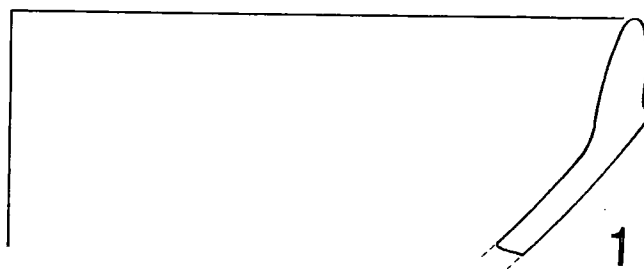
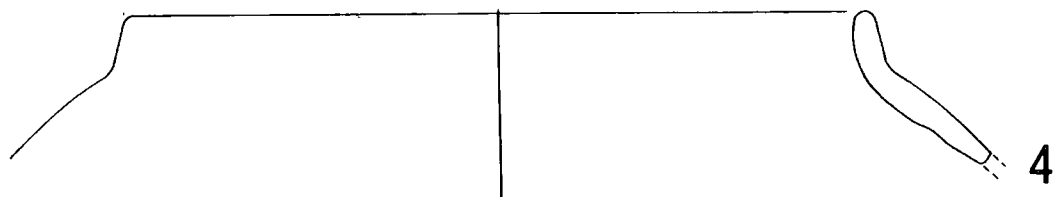
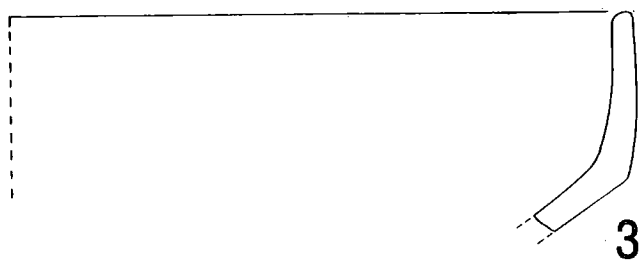
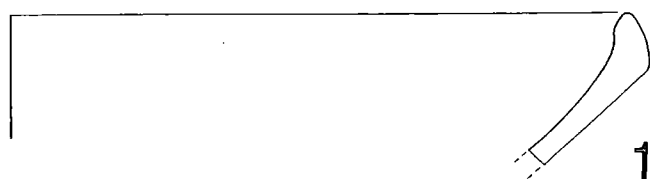


Fig.IV.25. Chalcolithic (Karanovo VI-Gumelnita) pottery from Karabaş.

1. Karabaş. Medium fine fabric, greyish black in colour, lightly burnish on exterior, interior smoothed.
2. Karabaş. Medium fine fabric, greyish buff in colour, lightly burnished on exterior, interior smoothed.
3. Karabaş. Medium fine fabric, buff in colour, burnished on interior, exterior smoothed only, decorated with graphite paint on interior.
4. Karabaş. Fine fabric, grey exterior, black interior, reddish buff slip on exterior, burnished on exterior, interior smoothed.
5. Karabaş. A lug handle. Medium fine fabric, greyish black in colour, burnished.
6. Karabaş. A lug handle. Medium fine fabric, buff in colour, smoothed.
7. Karabaş. Coarse fabric, Black in colour, both surfaces are smoothed.
8. Karabaş. Medium fine fabric, brown in colour, red paint on interior and below the rim, burnished below the rim only, decorated with very shallow grooved lines.



0 1 2 3 cm

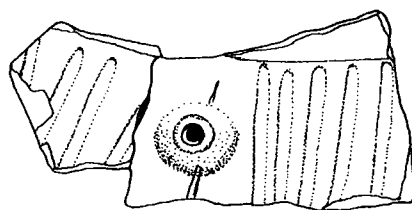


Fig. IV.26. Chalcolithic (Karanovo VI-Gumelnita) pottery from Karabaş.

1. Karabaş. Fine fabric, black in colour, reddish buff slip on exterior, burnished.
2. Karabaş. Medium fine fabric, exterior buff, interior black, both surfaces are smoothed.
3. Karabaş. Fine fabric, exterior grey, interior greyish black, burnished.
4. Karabaş. Medium fine fabric, greyish black in colour, lightly burnished on exterior, interior smoothed.
5. Karabaş. Medium fine fabric, reddish brown in colour, red paint on exterior, burnished on exterior, interior smoothed, decorated with shallow grooved lines.

The technique of channelling is commonly used on bowls with thickened carination. Channels are set obliquely or vertically on carinations of bowls (Fig.IV.4:2-3). Another decoration is incised lines. They are combined with dot impressions (Fig.IV.5:4,6-7). Finger impressed applied bands also occur. The closest parallels for channelling decoration can be found at Drama (Lichardus 1991: Abb 4;10,13,18) and Aşağı Pinar (Özdoğan 1999a: Fig. 32 and 35 ; Parzinger and Özdoğan 1995: Abb. 14).

Late Neolithic pottery (Çardakalti and Kalojanovec): For Çardakalti, three decorative techniques are introduced: grooving, impressed and white painting. The most characteristic technique is grooving. The whole surfaces of bowls are decorated with wavy grooved lines, sometimes parallel to each other. In the Classic Çardakalti vessels, grooved decoration is always combined with triangular dot impressions (Fig.IV.7.1-2). Dots are set always immediately below the rim in a single line (Plate IV: top). Incised dots also occur on carinated and round-sided bowls (Fig.IV.7:5 ; Fig.IV.8:4). Occasionally the interiors of bowls are decorated with dot impressions (Fig.IV.7:5).

White on Black painted decoration is generally found on necked jars and “S” shaped bowls (Fig.IV.8:5-7 ; Fig.IV.9:1). White paint was applied over the dark burnished surface after burnishing and firing. Occasionally the paint affected the burnish (Plate IV; bottom). The white paint is hardly visible and sometimes comes off. Designs consist of thin parallel horizontal, vertical or curved lines.

Kalojanovec dishes are decorated with wide excised lines, sometimes with white encrusted (Plate V: top). Generally, both interior and exterior surfaces are decorated (Fig.IV.6.1-4,6 ; Fig.IV.8:1-3). Occasionally wide excised lines are combined with dot impressions (Fig.IV.6:1). The closest parallels can be found sites such as Hlebozavoda (Kancev and Kanceva 1988: Tab.I; 6-8 ; Tab.II; 6-7).

Late Neolithic pottery (Maslidere): Decoration is common. The surface of the vessels was roughened by irregular, deep incision-like scraping or by combing. Irregular lumps of clay, similar to barbotine technique are applied (Plate V: bottom and Plate VI). Irregular finger impressed applied bands are also used (Fig.IV.10:1-5 ; Fig.IV.11:1-8). They are set generally immediately below the rim and may or may not continue around the vessel. Small appliqué knob-like projections are also common (Fig.IV.10:1-2 ; Fig.IV.11:1,3). They are set either on carination or below the rim of bowls. Stroke-impressed dots and deeply excised lines are also used, generally together. Occasionally, all of these decoration techniques are executed on the same vessel. The closest parallels for Maslidere decoration can be found at Toptepe (Özdoğan et al. 1991: Fig. 20; 6-8, 11-13).

Chalcolithic pottery (Pre-Cucuteni / Maritsa (= Kocatepe): Various decorative techniques have been employed, such as impressed, plastic, incised and excised (Plate VII-VIII). Decoration is generally applied on high-pedestalled foots and bowls, sometimes on dishes. Impressed decoration comes in several variations, such as dots, triangles, rectangles and half crescents (Fig.IV.3:3 ; Fig.IV.17:2,6). Deep and big dots impressions are quite common (Fig.IV.13:2,4 ; Fig.IV.15:4-5). Rectangular chips of clay were cut and arranged in a chessboard pattern (Fig.IV.16:2-3 ; Fig.IV.18:1). Nail impression is also used. The whole surface of the vessel can be decorated with raised nail impressions.

Incised and excised lines are the most common decoration techniques, generally filled with white paint (Fig.IV.13:1 ; Fig.IV.14:2-3 ; Fig.IV.17 ; Fig.IV.18). Occasionally the space between the incised on excised lines is filled with red paint (Fig.IV.13:2 ; Fig.IV.15:1). Small appliqué knob-like projections are also used (Fig.IV.14:4). The closest parallels for the decorative techniques of Kocatepe pottery can be found in a large geographic area (viz. the Maritsa, Sava and Pre-Cucuteni Cultures) (Marinescu-Bâlcu 1974: Fig. 52:9 ; Fig. 41:14 ; Marinescu-Bâlcu 1981: Fig.65:8 ; Fig. 61:5 , Fig.77:13 ; Mirtchev 1960: Fig.18 ; Todorova 1986: Fig. 22:3 ; Fig. 23:9).

Chalcolithic pottery (Karanovo VI / Gumelnița): Decoration is not common. However, many different decorative techniques are introduced, such as incised, impressed, barbotine, corded, channelling, graphite and white paint. Graphite decoration is very rare (Plate XI-XII). It is applied on the exterior surfaces or the interior rim of the shouldered bowls (Fig.IV.20:3 ; Fig.IV.23:4 ; Fig.IV.25:3). In one example, graphite paint was found inside a vessel (Fig. Fig.IV.24:4). There is only one example of white painted decoration from Tepeyani (Fig.IV.24:5). White paint was applied to both the interior and exterior of a black burnished sherd.

Impressed decoration is very common. Probably stick or bone was used to execute impressed decoration. Impressed triangles made by a stick are found on the whole surface of the vessels (Fig.IV.21:9). Stroke-like and small dot impressions are also used (Fig.IV.21:10). Shell-impressed decoration is very common (Fig.IV.21:6-7 ; Fig.IV.23:6 ; Fig.IV.24:11). Parallel-incised lines are sometimes combined with small dot impressions (Fig.IV.24:12). Vertically channelling decoration was found at only one settlement - Karabas (Fig.IV.26:5 ; Fig.IV.25:8). Red painted sherds also occur rarely. The red paint is applied below the rim as a single band (Fig.IV.25:8). In one example, the whole surface of a carinated rim bowl was decorated by red paint. Cord-decorated sherds are also rare. All come from Yumurta Tepe (Fig.IV.21:4-5). The closest can be found at sites such as Karanovo (Hiller and Nikolov 1997: Tafel 128:3,7 ; Tafel 129:14,15 ; Tafel 132:8 ; Tafel 133:17,18 ; Fig. 137:7,11,12).

To sum up, in Karanovo III pottery, the most frequent decoration is channelling. It occurs generally on straight-sided dishes with thickened rim. Channelling decoration is also common technique for Karanovo III-IV pottery. The interior rim of straight-sided dishes, carinations of thickened carination bowls and necks of tall-necked jars are decorated with this technique. Grooving is the most common technique for Çardakalti pottery. Surface of bowls are decorated with wavy grooved lines. Grooved decoration is always combined with triangular dot impressions. White on black painted decoration of Çardakalti consists of thin parallel, horizontal, vertical and curved lines. Decoration is common in Maslidere pottery. Stroke-impressed dots, deeply excised lines, applied bands and knob-like projections etc. are used on the whole surface of bowls.

Decoration is rich in Kocatepe pottery. Big dot impressions and rectangular chips of clay were cut and arrange in a chessboard pattern are quite characteristic. Incised and excised lines are generally filled with white paint. In Karanovo VI- Gumelnița pottery, decoration is not common. However, different decorative techniques are introduced, such as incised, impressed, barbotine, channelling, and graphite paint.

Stylistic analyses have been developed into 3 levels: 1. compiling the individual design elements appearing on the pottery; 2. finding design units (or motifs or schemes) on the basis of design elements; 3. investigating the context of design units on the vessels.

Stylistic analyses were done only where the individual design elements could be seen as constituting design units (motifs). Thus stylistic analysis was done for only three different pottery groups in the Edirne region - Maslidere, Kalojanovec and Kocatepe. Among them the Pre-Cucuteni / Maritsa (= Kocatepe) pottery decoration is noteworthy.

Pre-Cucuteni / Maritsa (= Kocatepe): Two individual design elements can be distinguished: linear and dot. Each design element can be divided into simple designs and complex designs.

1. Linear: Linear patterns are relatively simple. A single line was only used for boundaries.

A. Simple designs

A1. Parallel horizontal: Parallel lines set horizontally.

A2. Parallel vertical: Parallel lines set vertically.

A3. Parallel oblique: Parallel lines set obliquely.

A4. Parallel chevron: Parallel lines making a chevron.

A5. Wavy line: A single wavy line.

A6. Combined: Horizontal, vertical, oblique and chevrons set together.

2. Dot: Dots are also simple designs. A big single dot is very common.

A1. Parallel or mixed dots: Dots set parallel to each other or they set disorganised.

A2. A dot and a straight line: A straight line is ended with a dot.

A3. Parallel dots and straight line: Dots and a straight line parallel each other.

- A4. A dot and a wavy line: Dots set either inside the wavy lines or a wavy line is ended with a dot.
- A5. A dot and a chevron: Parallel chevrons are ended with a dot.
- A6. A dot and a lozenge: Dots are set corners of a lozenge.
- A7. Triangular dots: Triangular dots set parallel each other.
- A8. A triangular dot and a straight line: A straight line is ended with a triangular dot.
- A9. Half crescent dots: Half crescent dots set parallel each other.
- A10. Rectangular dots: Rectangular dots set parallel each other. Sometimes they set close each other, remaining chessboard pattern.

B. Complex designs.

- B1. Spiral: This motif consists of spiral pairs. It can be placed either vertically or horizontally. Different versions of the spiral pattern are seen in Fig.IV.27.
- B2. Chessboard: Rectangular chips of clay were cut and arranged in a chessboard pattern. The chessboard pattern consists of linear motifs. Linear and dot combinations also exist.
- B3. Ladder: This is the most popular complex design. They are set vertically, horizontally or obliquely. Parallel ladders are also common.

Generally, all of these designs are executed on the same vessel. Designs can be seen on 3 different vessels: the high pedestalled foot, bowls with "S" profiles and the straight-sided dish or round-sided bowls.

Design arrangements show that there is a narrow band of design on the upper and lower parts of the high-pedestalled foot and a broader band on the middle (Fig.IV.15:1 ; Fig.IV.16:3). There are no gaps between bands. However, sometimes there are no upper and lower bands, and design starts immediately (Fig.IV.15:4-5 ; Fig.IV.16:4). Inside the narrow bands, designs such as big single dots of line, parallel or mixed dots, triangular dots, half crescent and rectangular dots etc. were executed. Occasionally broader lines consist of a ladder design, and a chessboard design can be seen on the lower band of the vessel (Fig.IV.16:1-3). The broader band in the middle consists of complex designs, such as different versions of spiral, ladder and chessboard patterns (Fig.IV.17:3-6). The top of the vessel was decorated either by big single dots or linear patterns, such as wavy lines and parallel chevrons combined with dots.

In S-profile bowls, design arrangements are different on the neck and body. There is a narrow band of design on the neck and a broader band on the body (Fig.IV.13:2-4). Occasionally, there is no band immediately below the rim, and this part is decorated with big dots or lines combined with dots. Inside the band of the neck occurs a linear pattern and dots. The body was also decorated with the combination of dots and lines (Fig.IV.17:2). Complex designs such as spirals and ladders also occur.

In dishes or round-sided bowls, the designs were executed either inside a single band or immediately on the body without any band (Fig.IV.13:3 ; Fig.IV.14:1). Again

complex designs such as spirals, ladder or chessboard or simple designs of the combination of dots and lines have been executed.

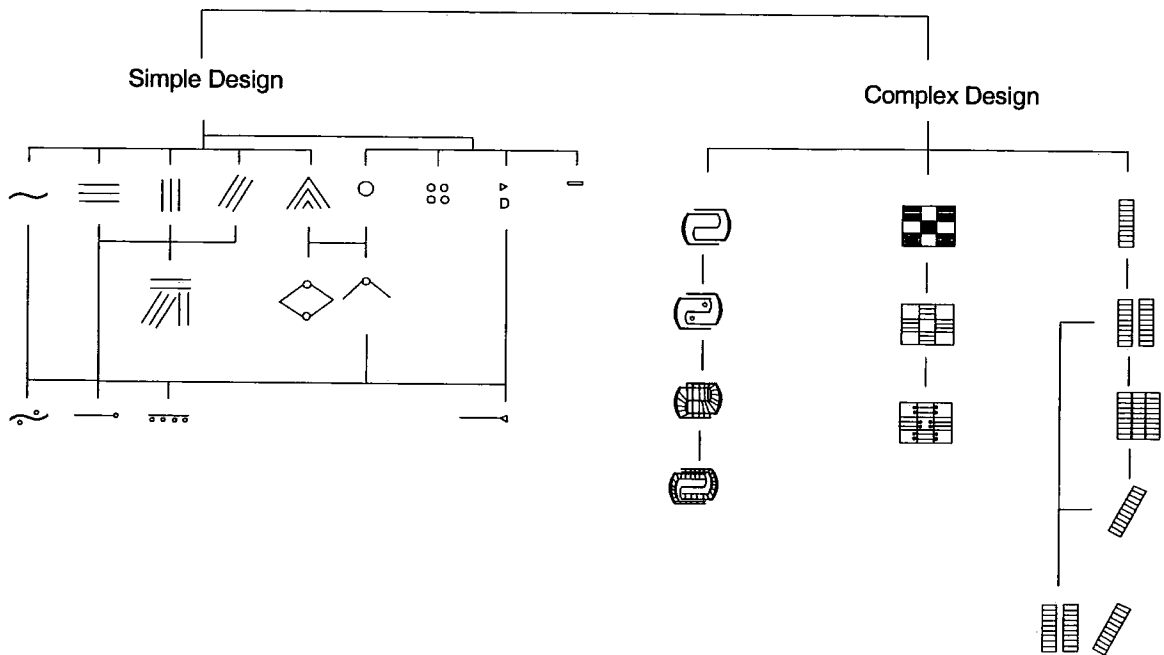


Fig.IV.27. A hierarchical classification system for the designs on Kocatepe pottery.

Maslidere: Two individual design elements can be distinguished: linear and dot or stroke.

1. Linear:

A. Simple designs.

A1. Parallel vertical: Parallel lines set vertically.

A2. Parallel oblique: Parallel lines set obliquely.

A3. Parallel chevron: Parallel lines make chevron.

A4. Square: Small squares set in one line.

A5. Wavy line: There is only one example.

2. Dot or stroke:

A. Simple designs.

A1. Parallel vertical: Parallel dots or strokes set vertically. Generally, they set in two rows.

A2. Parallel horizontal: Parallel dots or strokes set horizontally

A3. Parallel chevron: Parallel strokes making a chevron.

A4. Combine: Parallel vertical and horizontal dots set together.

B. Complex designs: Complex designs consist of dots or strokes combined with linear pattern. Different versions of complex designs are seen in Fig.IV.28.

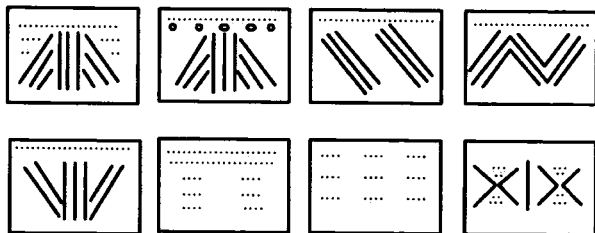


Fig.IV.28. Complex designs on Maslidere pottery.

Designs are typically applied on rounded bowls. The whole surfaces of bowl were decorated. Generally design started immediately below the rim. Below the rim was a single or a double row of dots or strokes, and in one example with squares. Sometimes, the rim was decorated with irregular finger-impressed applied bands. The most common body decoration is parallel vertical lines and chevrons combined with dots.

Kalojanovec: The individual design elements consist of a linear pattern. However, dots are combined with linear patterns.

1.Linear.

A. Simple design.

A1. Parallel horizontal: Parallel lines set horizontally.

A2. Parallel vertical: Parallel lines set vertically.

A3. Parallel curved: Parallel curved lines.

A4. Parallel chevron: Parallel lines make chevron.

A5. Parallel oblique: Parallel lines set obliquely.

A6. Combine: Parallel vertical, oblique and horizontal lines set together.

2. Dot: mixed dots are always combined with lines

B. Complex design: Complex designs can be seen inside the vessels (Plate V: top).

B1. Spiral: Single or double spirals are made with horizontal, vertical or curved lines, or sometimes with dots.

B2. Cross: This motif is made with horizontal or vertical lines. Gaps are filled with Chevrons.

B3. Chessboard: This motif is made with linear patterns or occasionally with dots.

Designs are applied on dishes. Both, the exterior and interior surfaces are decorated. Complex designs are executed on the interior surfaces of dishes. The tops of the rim of dishes are decorated with chevrons or oblique lines. The main design is set inside a broader band. Inside the band is decorated with spiral, combined lines, cross and chessboard motifs. The exterior sides of the dishes are decorated with simple designs. Parallel horizontal, vertical and oblique lines can be seen on the exterior surfaces.

The results of stylistic analyses from 3 different pottery groups have been outlined above. While all share similar simple design elements, the execution of the motives is totally different. In Kocatepe pottery, complex designs consist of spirals, chessboards and ladders. Different spirals and chessboard designs were also found on Kalojanovec pottery. In Maslidere pottery, complex designs consist of dots or strokes combined with linear patterns.

IV.B.3.5. Function and Size

Vessel function and use can be examined using a combination of the fabric, form and size of the vessels (Skibo 1992: 36). The primary advantages of pottery are that they can be placed over heat without being destroyed, and they can be used for long-term storage of liquids or dry goods, protecting their contents from moisture and vermin. Rice lists 3 broad categories of vessel use - storage, processing and transfer (Rice 1987: 209). Factors to be considered include whether the contents are wet or dry, hot or cold, the duration of use and the distance of transfer, Rice breaks down these categories into 17 types of vessel use. Similarly, Smith lists 14 use categories in examination of the ethnographic literature (Smith 1988: 913-914). When we look at his categories, five general types could be employed; cooking, storage, processing, serving and drinking or serving liquid. Ethnographic studies show that many vessels are multifunctional; when the vessels are no longer being used for their primary function, they are frequently employed in a variety of secondary uses (Skibo 1992:38).

To assist in determining actual function, the analysis of residues and the recording of use-wear patterns are necessary. Thus only the general aspects of function and use may be determined in the pottery of the Edirne region. Two factors are important for cooking vessels - the shape of vessel and fabric of vessel (Pyke and Yiouni 1996: 186). The majority of cooking pots have rounded body (Woods 1986). The large vessels with hole-mouth and necked jar categories are useful for storage. It is difficult to determine the actual function of the prehistoric pottery of the Edirne region. However, we assume that bowls may serve for cooking, drinking or storage. Rounded or hole-mouth vessels are especially suitable for storage. Dishes and round-sided bowls may serve as food preparation and serving. Necked jars may serve as containing or serving liquid. Some jars may be used for storage. Some communities in the Andean highlands occasionally make miniature vessels for particular festivals (Sillar 2000: 122). Thus, miniature vessels are probably used both as toys and as ritual items.

A record of the vessel size will be required in order to examine vessel function and use. Analysis of size of recovered sherds in the Edirne region show that there are 4 basic sizes: 1. very small; < 7 cm. 2. small; 7-11 cm. 3. medium; 12-20 cm and 4. large > 21 cm.

The method of analysis was measuring rim diameters for ca. 5 sherds in each form. The results show that during the Early Neolithic period, medium-sized bowls and dishes are prominent. During the Middle Neolithic period, straight-sided dishes and incurved rim bowls are large. In the Late Neolithic period, most of dishes and bowls are large in size. In the Early Chalcolithic period, dish forms and incurved rim bowls are large in size while the rest are medium. During the Late Chalcolithic period almost all open forms of dishes and bowls are large in size. Vessels with diameters greater than 21 cm were considerably more frequent than in the Early Chalcolithic.

In the Late Neolithic (Karanovo III) period, dishes and jars are generally medium in size. However, the sizes of bowls vary from medium to large. Carinated rim bowls are especially large in size. The sizes of the Late Neolithic (Maslidere) bowls vary from medium to large. However, there are also small bowls. The Late Neolithic Çardakalti dishes are large in size. The sizes of bowls and jars vary from medium to large. All the Kalojanovec dishes are medium in size.

During the Chalcolithic Pre-Cucuteni /Maritsa (= Kocatepe) period, large dishes are prominent. The size of bowls varies from medium to large. However, large bowls are more common. The sizes of high-pedestalled foots also vary from medium to large, and again large sizes are common.

During the Chalcolithic Karanovo VI period large dishes and bowls are prominent. The size of jars and necked bowls varies from medium to large.

The relationships between the average of measuring rim sherds in each forms and frequency of each form are seen in Fig.IV.29.a-f. According to the graphs, during the Early Neolithic period, only hole-mouth jars are very large (average 20 cm). The average of the other forms' rim diameters measure between 12 cm and 14 cm. Deep bowl with "S" profile has a high frequency. During the Karanovo III period, closed forms of bowls are medium in size (average 18 cm). Dish forms as well as incurved rim bowls are large in size (average between 28 cm and 32 cm). During the Late Neolithic Karanovo III-IV period, dishes and closed carinated bowls are large in size (average between 23 cm and 30 cm). During the Late Neolithic Çardakalti period, with the exception of straight-sided dishes and necked jars, all forms are medium in size (average between 12 cm and 20 cm). Rounded bowls have a high frequency. During the Early Chalcolithic period there was an equal division between the medium and large sized forms. High-pedestalled feet have a high frequency. During the Late Chalcolithic period, large sized forms are increased. Necked, rounded and carinated bowls are in medium in size (average between 12 cm and 18 cm).

Measuring of vessels is also related to their function. Large and deep vessels are suitable for storage. For example, hole-mouth vessels in the Early Neolithic period can be used for storage. However, in Turkish Thrace, most of the large vessels are associated with

dishes. Their function could be serving rather than storing. Mills argues that preparing food and intensification in the consumption of special foods will also affect vessel size (Mills 1999). For example, when the large sizes of meat of the domesticated animals were introduced into the Pueblo diet, size of serving and cooking bowls changed. Nelson (1981) also argues that household size and status affect vessel size.

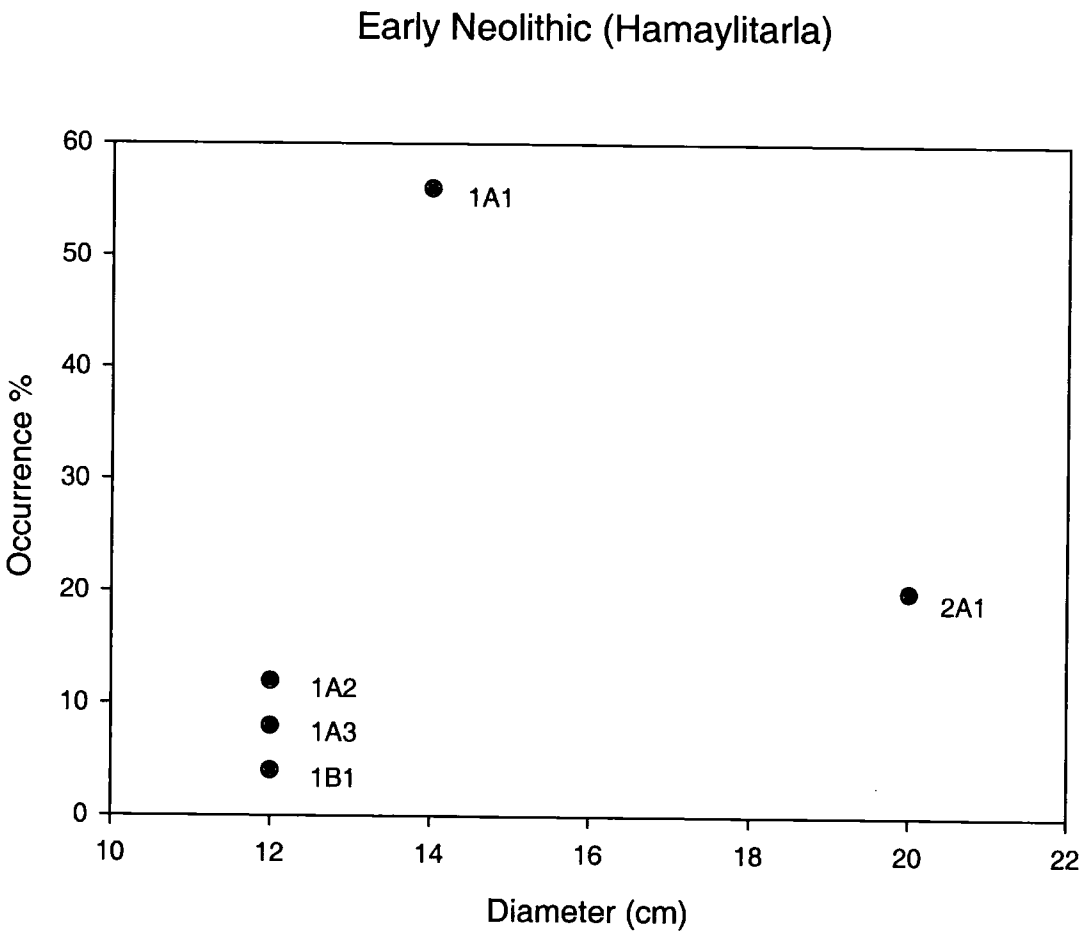


Fig.IV.29.a. Distribution of rim diameters for Early Neolithic (Hamaylitarla) pottery.

Middle Neolithic (Karanovo III/Vesselinovo)

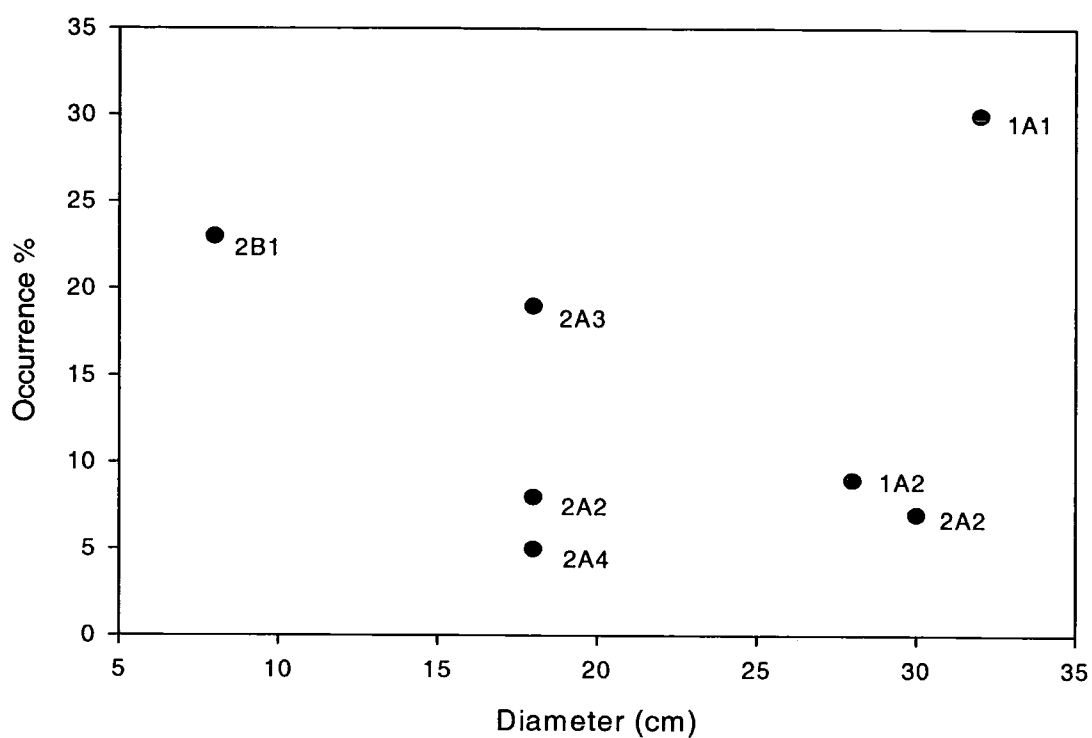


Fig.IV.29.b. Distribution of rim diameters for Middle Neolithic (Karanovo III) pottery.

Late Neolithic (Karanovo III-IV)

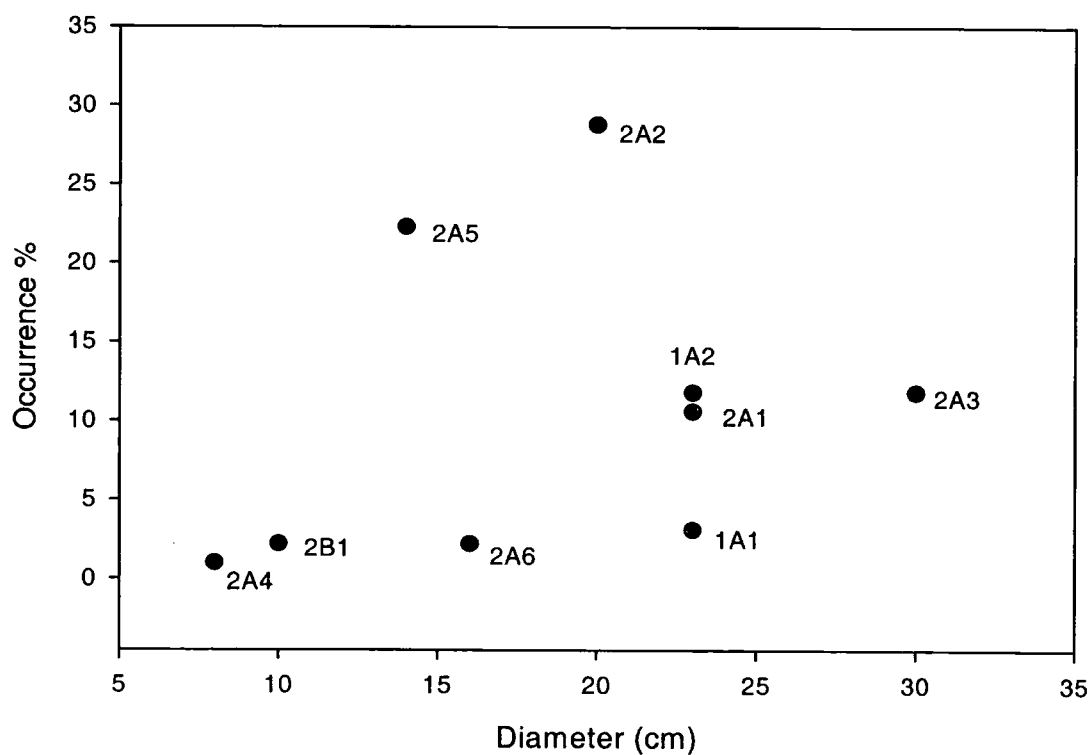


Fig.IV.29.c. Distribution of rim diameters for Late Neolithic (Karanovo III-IV) pottery.

Late Neolithic (Cardakalti)

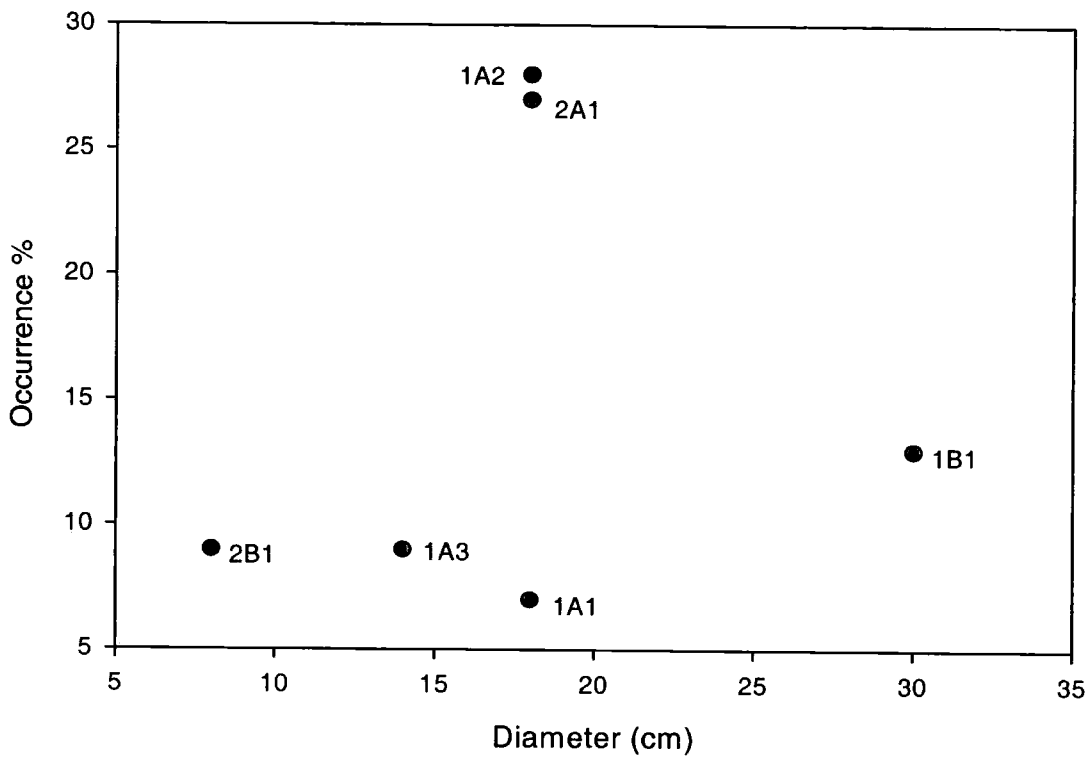


Fig.IV.29.d. Distribution of rim diameters for Late Neolithic (Çardakalti) pottery.

Chalcolithic (Kocatepe)

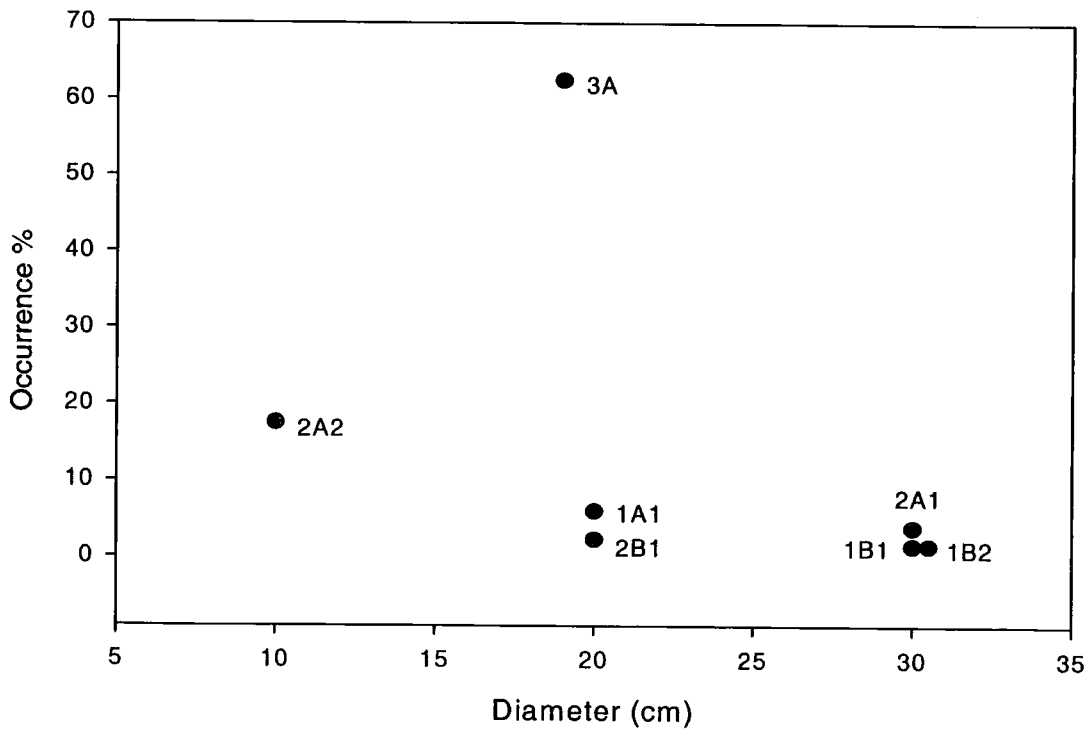


Fig.IV.29.e. Distribution of rim diameters for Chalcolithic (Kocatepe) pottery.

Chalcolithic (Karanovo VI)

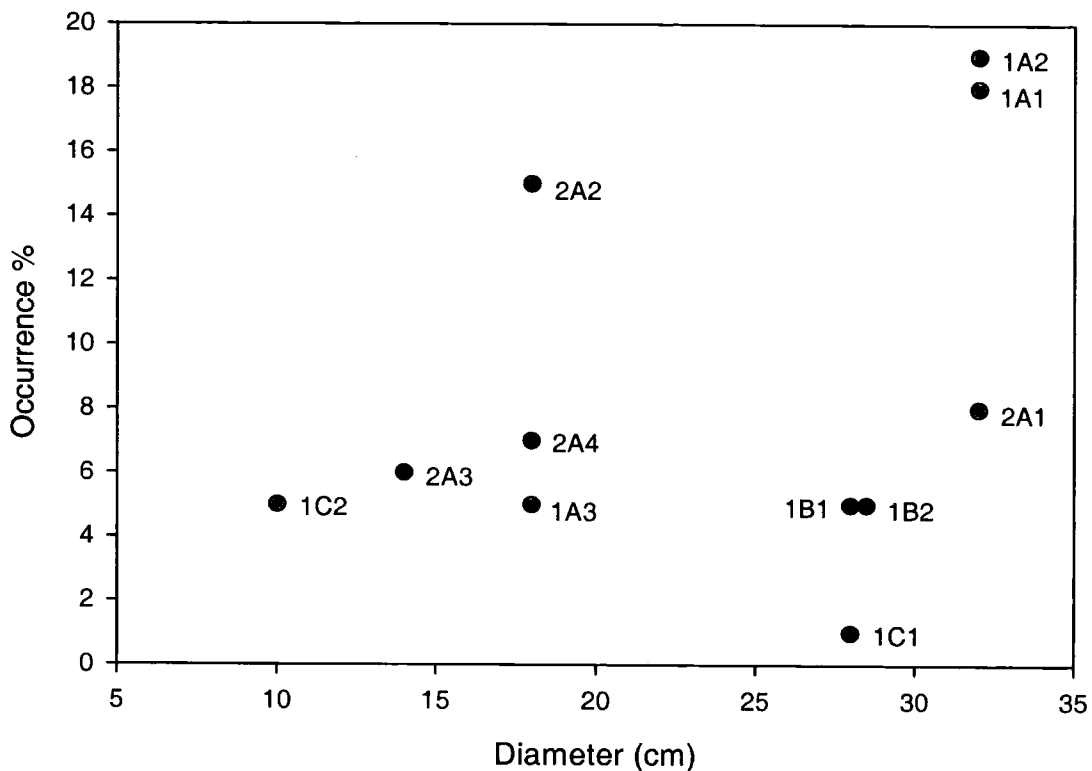


Fig.IV.29.f. Distribution of rim diameters for Chalcolithic (Karanovo VI) pottery.

IV.B.3.6. Analysis

In Early Neolithic (Hamaylitarla) pottery, the most frequent form is a deep bowl with “S” profile. It represents 56 % of the total assemblages. Other forms are as follows: hole-mouth jar 20 %, deep bowl with flaring sides 12 %, everted necked bowl 8 % and straight-sided dish 4 %. The vast majority of the Early Neolithic pottery is red slipped. A small quantity of black and brown burnished sherds is frequent among deep bowls with “S” profile.

In the Middle Neolithic (Karanovo III-Vesselinovo) pottery, the most frequent form is straight-sided dish with internally thickened rim. It represents 30 % of the total assemblages. Necked jars and carinated rim bowls are also frequent. They represent 23 % and 19 % of the total assemblages. The percentages of other forms are as follows: straight-sided dish with rounded rim (9 %), Rounded bowl (8 %), incurved rim bowl (7 %), Carinated bowl (5 %) and boxes (1 %). Forms occur equally as grey, black and dark brown wares. Channelling decoration can be seen on straight-sided dishes, rounded bowls and carinated bowls.

In the Late Neolithic (Karanovo III-IV / Aşağı Pinar 3) pottery, the most frequent forms are bowls with thickened carination and rounded bowls. They represent 28 % and 22

% of the total assemblages. Other forms are as follows: Carinated rim bowl (13 %), Carinated bowl (11 %), straight-sided dish with internally thickened rim (11 %), boxes (4 %), straight-sided dish (3 %), necked jar (2 %), round-sided bowl (2 %) and “S” shaped bowl (1 %). Table. IV.11 shows comparison of wares vs. forms. According to results, dark coloured ware is most frequent among all shapes. It represents 71.2 % of the total assemblages. Red coloured ware is most frequent among open forms and closed forms of bowls. It represents 19.2 % of the total assemblages. Slipped ware occurs in straight-sided dish, bowl with thickened carination, carinated rim bowls and round-sided bowls. Coarse ware occurs among only in rounded bowls.

Channelling decoration can be seen on straight-sided dishes with internally thickened rim (38 %), bowls with thickened carination (38 %) and carinated bowls (24 %). Incised and impressed decoration can be seen on straight-sided dishes with internally thickened rims (33 %), rounded bowls (33 %) and boxes (34 %). Decoration is the most frequent among dark coloured wares.

Table IV.11. Wares and forms of Karanovo III-IV pottery.

| | Dark Ware | Slipped ware | Red Ware | Course Ware | % Frequency by forms |
|----------------------|-----------|--------------|----------|-------------|----------------------|
| 1A1 | 33.3% | | 66.6% | | 3.1% |
| 1A2 | 80% | 10% | 10% | | 10.6% |
| 2A1 | 72.8% | | 27.2% | | 11.8% |
| 2A2 | 77.8% | 11.1% | 11.1% | | 28.8% |
| 2A3 | 70% | 10% | 20% | | 11.8% |
| 2A4 | 100% | | | | 1.0% |
| 2A5 | 57.2% | | 28.5% | 14.3% | 22.3% |
| 2A6 | 50% | 50% | | | 2.2% |
| 2B1 | 100% | | | | 2.2% |
| 3A | 100% | | | | 1.0% |
| 3B | 100% | | | | 4.2% |
| 3C | 100% | | | | 1.0% |
| % Frequency by Wares | 71.2% | 6.4% | 19.2% | 3.2% | 100 % |

In the Late Neolithic (Çardakalti) pottery, the most frequent forms are round-sided bowls and rounded bowls. They represent 28 % and 27 % of the total assemblages. Other forms are as follows; straight-sided dishes (13 %), straight-sided deep bowls (9 %), necked jars (9 %), carinated bowls (7 %) and “S” shaped bowls (7 %). Carinated bowls and round-sided bowls are decorated with dot impressions. Grooving decoration can be seen on

straight-sided deep bowl and rounded bowl. White on black painted decoration is found on necked jars and “S” shaped bowls. The most decoration can be seen on red coloured ware (67 %).

In the Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery, the most frequent form is the high-pedestalled foot. It represents 62.5 % of the total assemblages. Other forms are as follows: round-sided bowls (17.5 %), deep bowls with “S” profile (6 %), incurved rim bowls (3.9 %), necked jars (2.3 %), straight-sided dishes (1.5 %), straight-sided dishes, evenly cut on the top (1.5 %), boxes (1.5 %), miniature vessels (1.3 %), clay spoons (1 %) and lids (1 %). Table. IV.12 shows a comparison of wares vs. forms. The most characteristic form - the high-pedestalled foot - represents 100 % of the thick-walled ware. Other forms were manufactured in dark coloured and red coloured wares. Only round-sided bowls were manufactured in course ware. In addition, coarse ware represents only 1 % of the total assemblages. Decoration is applied mostly on high-pedestalled foot and bowls, sometimes on dishes. Most of the decoration can be seen on thick-walled ware.

Table IV.12. Wares and forms of Pre-Cucuteni / Maritsa (=Kocatepe) pottery.

| | Dark Ware | Red Ware | Thick Walled W | Course Ware | % Frequency by forms |
|----------------------|-----------|----------|----------------|-------------|----------------------|
| 1A1 | 73.4% | 26.6% | | | 6.0% |
| 1B1 | 50% | 50% | | | 1.5% |
| 1B2 | 100% | | | | 1.5% |
| 2A1 | 80% | 20% | | | 3.9% |
| 2A2 | 88.7% | 9.0% | | 2.3% | 17.5% |
| 2B1 | 33.4% | 66.6% | | | 2.3% |
| 3A | | | 100% | | 62.5% |
| 3B | 100% | | | | 1.5% |
| 3C | 100% | | | | 1.3% |
| 3D | 50% | 50% | | | 1.0% |
| 3E | 50% | 50% | | | 1.0% |
| % Frequency by wares | 29.5% | 7.0% | 62.5 | 1.0% | 100 % |

In the Chalcolithic (Karanovo VI) pottery, the most frequent forms are carinated rim bowl, shouldered bowl, carinated bowl. They represent 19 %, 18 % and 15 % of the total assemblages. Other forms are as follows: incurved rim bowl (8 %), necked bowl (7 %), rounded bowl (6 %), round-sided dish (5 %), straight-sided dish with plain rim (5 %), straight-sided dish with internally thickened rim (5 %), straight-necked jar (5 %), perforated vessels (4 %) and funnel necked jar (1 %). Table. IV.13 shows a comparison of

wares vs. forms. According to these results, most of the forms were manufactured in dark coloured ware. 61 % of carinated bowls, 57 % of round-sided bowls and 57 % of shouldered bowls were made in dark coloured ware. On the other hand funnel-necked jar was not manufactured in dark coloured ware but in slipped ware. Only carinated rim bowls, round-sided bowls, straight-necked jars and carinated bowls were manufactured in buff, brown burnished ware. Again only round-sided bowls were manufactured in coarse ware. Decoration is rare. Only 11.2 % of the total pottery was decorated. The most frequent decorations are impressed and incised. They represent 44.1 %, and 33.3 % of the total assemblages. Only 5 sherds of graphite painted decoration were found, representing 4.9 % of the total assemblages. Most of the decorated sherds were manufactured in red coloured ware, it representing 51.9 % of the total assemblages. Decoration in dark coloured wares represents 43.2 % and decoration in slipped ware represents 4.9 % of the total assemblages. No decoration was found in buff, brown burnished ware.

Table IV.13. Wares and Forms of Karanovo VI / Gumelnița pottery.

| | Dark Ware | Brown Ware | Slipped Ware | Red ware | Coarse Ware | %Frequency by forms |
|---------------------|-----------|------------|--------------|----------|-------------|---------------------|
| 1A1 | 57% | | 18% | 25% | | 18% |
| 1A2 | 55% | 3.5% | 10.5% | 31% | | 19% |
| 1A3 | 57% | 14.4% | | 14.4% | 14.4% | 5% |
| 1B1 | 28.5% | | | 71.5% | | 5% |
| 1B2 | 43% | | 14% | 43% | | 5% |
| 1C1 | | | 100% | | | 1% |
| 1C2 | 43% | 14% | | 43% | | 5% |
| 2A1 | 31% | | 7.5% | 61.5% | | 8% |
| 2A2 | 61% | 9% | 9% | 21% | | 15% |
| 2A3 | 40% | | 10% | 50% | | 6% |
| 2A4 | 25% | | 33% | 42% | | 7% |
| 3A | 33.3% | | 33.3% | 33.3% | | 2% |
| 3B | 50% | | | 50% | | 4% |
| %Frequency by wares | 48% | 3% | 12% | 36% | 1% | 100 % |

IV.B.4. Concluding Remarks

A study of pottery manufacture, ware types, shapes, decoration, design and function in the Edirne region is outlined above. A number of distinctive ware types occurs

throughout the Neolithic and Chalcolithic periods. The vessels in each ware type were probably made from local resources. Each period has own distinctive shapes and decoration. However, we observe that there are no strong differences between the Middle Neolithic Karanovo III and the Late Neolithic Karanovo III-IV and Aşağı Pinar 2 and 3 ware types and also between the Chalcolithic Kocatepe and Karanovo VI ware types. On the other hand, in the Late Neolithic period, it seems that different groups of people produced their own pottery, for instance, Maslidere, Çardakalti and Töptepe etc. Different wares and shapes between groups in the Edirne region may indicate different diet and nutrition, different social aspects of food preparation and consumption or different organization and allocation of work beyond pottery making.

Although pottery may serve in basic tasks such as cooking and storage, it also may be used during ritual, mortuary activity and food ceremonies. Some decorated pottery in the Edirne region may also serve these kinds of functions. Whether as status item or as an indicator of group identity, decorated vessels might seem to carry a greater symbolic load. In the Edirne region, Kalojanovec dishes or Kocatepe high-pedestalled feet and bowls with elaborate decorations are probably provided with a symbolic meaning. Decorated vessels with complex designs in the Edirne region may also be used during religious rituals and ceremonies involving food.

Colours on pottery are an important aspect of the structure of belief of people. In the Edirne region, dark (black, grey) and red coloured wares are common. Ethnographic evidences show that dark colours are associated with death or ancestral power and red with life or protection against evil. Both may be used in household and ritual contexts. Household status might also affect colours on pottery.

Pottery represents objectified persons and as mentioned above, they were identified in various ways with the bodies of persons. According to Vitelli, the first potters were not ordinary people, they were shamans (Vitelli 1999). The potter-as-shaman has the power to transform something into something else or someone. Making a pot is to establish a connection between a pot (the represented object) and person (representational subject). Getting clay for making pottery is also important and the focus of rituals. As mentioned above, ordinary people often do not gather clay. There are no detailed investigations of clay sources in Turkish Thrace. However, a thick tuff horizon around Taşlımüsellim in the Edirne region may be suitable for pottery making. There are also clay deposits near Kilyos-Istanbul.

Chapman argues that the residents who live in a prehistoric Balkan village put their discarded objects in areas between and beyond their houses (Chapman 2000b). For a long period of time, residents in the Balkans and as well as the Edirne region were living in this discard. This discard could be a pot, broken during use or accidentally. The residents put

their broken pottery outside their houses. On the basis of ethnographic evidences, we assume that these broken pots may act as guards to protect the household from evil.

The Neolithic and the Chalcolithic pottery from the Edirne region are thought to have connections with the Balkan pottery. However, it seems likely that most of the Edirne region pottery was the product of local development under the influence of the Balkans. Similarities and differences between the Edirne region pottery and those of the Balkans will be discussed in Chapter V.

IV.B. CHIPPED STONE

IV.B.1. Introduction

According to R. Wagner 'in learning how to use tools, we are secretly learning how to use ourselves' (Wagner 1975: 77). He claims that tool use is about the objectification of our skills as controls which tools place on the relationship between humans and the environment. In prehistoric times, stone served as the main material for making tools. Only stones that met certain technological requirements were used and they were deliberately sought out. Stone is most intractable and the most difficult material to work on. Each stone tool took so much labour to produce that it was among the most valued of a person's possessions. Certain techniques and technologies are used for making stone tools. Technique is embedded in, and inseparable from, the experience of particular subjects in the shaping of particular things. Technology, by contrast, consists in a knowledge of objective principles of mechanical functioning, whose validity is independent both of the subjective identity of its human carriers and of the specific context of its application (Ingold 1990: 7). Both technique and technology must be distinguished from tools. An important contribution to a general understanding of relative technologies is the "chaînes opératoires" of André Leroi-Gourhan, who defined, for each technological process, a number of stages of production, each with distinctive waste products (Leroi-Gourhan 1964). The "chaîne opératoires" consists of three elements; the knapped-stone objects themselves, the behavioural sequences that produced the objects, and the specific knowledge possessed by knapper enabling the production of the objects (Pélégri 1990). A higher level of the analysis over that offered by static débitage typologies and attribute analysis is therefore made possible: that of the manufacturing process itself, and the choices and decisions of specific technical actions taken in the reductive process of knapping stone by individuals (Edmonds 1990). Two separate research areas consequently emerge: the study of the physical and technical process of manufacture, and the study of cultural technology. The first is concerned with defining and reconstructing the sequences

of core reduction and tool manufacture, whereas the second is concerned with the wider social context of choices involved in technical action (Conolly 1999:14).

The cognitive research of Pélégryn shows that there are two fundamental elements for achieving a chaîne opératoire; knowledge and know-how. According to Pélégryn: 'As knowledge can be classed the mental representations of forms and materials (concepts), and a register of action modalities (brief gesture sequences associated to their practical result). Referring to the memorisations and mental representations of objects and of facts, this knowledge ensues from a memory that is explicit and declarative in nature. Within "know-how", we may distinguish between an "ideatory" time (evaluation, reflexion, decisions) and a motor time (programming and execution of the gesture) (Pélégryn 1990:118). Pélégryn has developed fine diagnostic criteria to identify knapping techniques and cognitive analysis of the different intellectual and physical components implied in knapping activities (Audouze 1999).

Palaeolithic specialists, while using the chaînes opératoires to analyse lithics, became dissatisfied because it led to an almost infinite number of solutions and did not assist in understanding the rationale behind Palaeolithic technology (Audouze 1999). Since a given object could be obtained by different technical processes and could perform different functions, they concluded that an object cannot be satisfactorily described and its function deduced from its typology. It can only be defined by its position in a succession of technical stages and by the process for which it was created (Audouze 1999). Boeda built a new method for reading objects to organize it in several stages; core refitting, the technological reading of scars or cores and flakes and experimental checking through experimental knapping in order to identify technical rules (Audouze 1999).

I attempted to use the concept of the chaînes opératoires in surface lithic finds of the Edirne region. There are three way of analysis for investigating chipped stones: typological analysis, functional analysis and technological analysis. Typological analysis is concerned with the definition and interpretation of morphological types of stone tools. Functional analysis involves the identification of the uses of tools, commonly utilising experimental techniques and microscopic study; it is not possible to use this approach here. Technological approaches concentrate on studying the manufacturing methods and techniques involved in the production of stone tools. What follows here a technological and typological analysis of chipped stone industries in the Edirne region.

IV.B.2. Technological Analysis of Chipped Stone Industries in the Edirne Region

A core is the primary piece of material from which blades or flakes are produced. In the Edirne region the prismatic blade core was used during the Neolithic and Chalcolithic period. The striking platforms of these cores were circular or ovoid in shape

and blades were struck from around the edge of the circumference until the platform become so small as to no longer be workable. The knapper first selects a suitable piece of material. This piece is generally round in section, irregularities are trimmed off. One end of the piece of material is then removed to produce a striking platform (Inizan et al. 1995). A crescentic flake removed to produce a striking platform was found at Kavakli 2, Yağcili and Köprübaşı (Fig.IV.30:6,25 ; Fig.IV.31:16). Later, the knapper removed a blade by striking the platform. After striking the initial blade, s/he strikes adjacent blades. Sometimes the knapper removes a series of small flakes down the side of the core to produce a line of crest (Inizan et al. 1995). S/he struck these horizontally, using the previous flake scar as a platform for the succeeding one. Next, s/he removed a blade by striking the platform immediately above this line. After s/he removed a crested blade, adjacent blades were removed.

In the Edirne region, tabular blade cores are also seen. The main difference between tabular and prismatic blade cores is that, instead of working around the circumference of the core, the knapper is now working in a line across the flat of the core. The knapper first selects or more often manufactures a piece of material that has a flat face. The shapes of the tabular cores vary considerably: rectangular, trapezoidal or rhombohedral. Preparatory flakes are always removed to regulate the surface of the core. Later, the initial blade is removed on the corners at either edge of the flat surface. After striking the initial blade from the corner of the core, the knapper proceeds to strike adjacent blades, moving steadily across the face of the core from one edge to other. The first row blades are generally crested. The knapper may begin to remove blade other part of the core. On this occasion, the core is called a multi-platform core. A blade with tabular core preparation scars was found at Kavakli 1.

Tabular cores tend to produce blades which are relatively straight in lateral section. Prismatic types, on the other hand, have a convex profile and tend to produce blades which have a pronounced curve when viewed in lateral section. Very regular blades are typified by parallel margins, two or three parallel scars, trapezoidal cross-sections and punctiform to linear butts. Punch or pressure techniques were used for removing blades (Inizan et al. 1995). In the Edirne region, flake cores are also frequently found.

In the Edirne region, percussive blades were also found. All appear to have been produced using percussive techniques, although whether this involved direct or indirect techniques is not clear.

Blade segments are used to make special tools, such as end-scrapers and burins etc. Especially distal ends are more useful for retouching into special tool types. An end-scraper is a blade segment, usually distal end, abruptly or semi-abruptly retouched into a round scraping edge. In the Edirne region, scrapers are generally manufactured from long, delicate blades. The retouch is on the distal tips, hence "end-scrapers on blade". In the

Edirne region, there are also side-scrapers where the retouch is on the side of a blade segment. End-scrapers on flakes were also common.

A burin is a tool with a short, chisel-like cutting edge, which is usually perpendicular. Knappers often manufactured such tools by truncating or abruptly retouching the end of a blade or a flake and then using the truncated surface as striking platform to remove one corner of the truncated end. The blow struck from the truncated surface created a long narrow triangular facet. The cutting edge of the burin is formed by the intersection of the facet.

Flakes are derived from a variety of different knapping procedures, from the maintenance and reduction of cores to the shaping of tools and thinning of bifaces. Sometimes flakes have retouched edges. However, this retouch closely follows the original edge of the flake and does not change the basic shape of the piece. Some small plain flakes are referred to as *débitage*.

IV.B.3. Raw Material

The raw materials used in the chipped stone industry of the Edirne region consist mainly of flint and quartz. Chalcedony, red radiolarite, jasper and other siliceous materials suitable for knapping are also present in smaller quantities. No obsidian was found.

Six types of flint, defined by colour, have been identified. Petrological analyses have not yet been completed.

1. Milky-brown flint with white core and black, white and reddish-brown spots. This type of flint is very common in the upper Ergene basin. It has milky-brown colour sometimes with white, sometimes with black and sometimes with reddish-brown spots and white cortex. It seems that this flint comes from different sources. According to I. Gatsov, who worked in both Bulgarian and Turkish Thrace, there is no milky-brown flint in Bulgarian settlements⁴ (Personal communication, I. Gatsov). We suppose that this type of flint comes from Turkish Thrace, close to the Istranca Mountains. During our surveys in the Edirne region, a small milky-brown flint source was found south of Ortakçi, Kolağali Mevkii, on the Iskenderköy stream. This source consists of milky-brown flint with white spots. This type of flint is not very high quality.

2. Black flint with white cortex. This type of flint is also common. It is black in colour, sometimes with small white spots. This flint is also not very high quality. We also suppose that it is a local flint and its source is somewhere in the Istranca Mountain region.

3. Honey flint. This type of flint is a high quality. The nearest known source of honey flint is the Radingrad, Razgrad and Reka Devnja area in Bulgaria⁵ (personal

⁴ Only a few examples found at Drama in Southeast Bulgaria (personal communication, I. Gatsov).

⁵ There are no detailed investigations about honey flint sources. According to Manolakis, during the Chalcolithic period honey flint comes from the Razgrad area (Manolakis 1996).

communication, J. Chapman and I. Gatsov). Its colour has very light and dark tones. Some examples have red coloured veins, may be iron-stained.

4. Honey flint with white spots. It is similar to previous one, but it has small white spots. Colours are darker.

5. Dark brown flint. This type of flint is rare. It has also chocolate brown coloured examples. It is high quality.

6. Yellow flint covered with black spots. This type of flint was found only at the settlements in the Tunca basin. Yellow in colour and whole surfaces are covered by black spots. It is high quality. No known local source.

Quartz is also frequently used especially in the Neolithic period. There are two type of quartz; milky and rose. Quartz comes from the Istranca Mountains (Kurtler 1978). Other siliceous rocks were used in smaller quantities. They were probably gathered from stream beds in immediate area of the settlements.

IV.B.4. Typological Analysis of the Neolithic and Chalcolithic Chipped Stone Industries in the Edirne Region

NEOLITHIC: Only a few chipped stone implements (10 pieces) were collected in the Early Neolithic settlement of Hamaylitarla. This sample indicates a micro-blade industry. A Middle and Late Neolithic chipped stone industry was investigated at three settlements - Yağcili, Avariz / Kumocağı and Köprübaşı (Plate XIII). All chipped stone implements represent here, coming from our 1995 and 1997 surveys. A total of 238 chipped stone implements was investigated.

1. Yağcili. A total of 68 chipped stone implements was investigated in Yağcili. The raw materials used in the chipped stone industry consist mostly of flint (63 pieces), and the raw material of 5 pieces is undetermined. Types of flints from Yağcili are seen in Table. IV.14.

Core. A total of 9 cores was found. It represents 13% of the total assemblage. 7 of them are single-platform cores and 2 of them are multi-platform core. Very few prismatic blade cores were found (Fig.IV.30:1). Others are tabular blade or flake cores (Fig.IV.30:2). It seems all cores are in the final phase of exploitation. There is one crescent-shaped piece removed to produce a striking platform (Fig.IV.30:6).

Table IV.14. Flint types of Yağcili chipped stone assemblages.

| Flint Type | No |
|-------------------------------|----------|
| Milky-brown flint | 50 (80%) |
| Black flint with white cortex | 10 (15%) |
| Honey flint | 1 (2%) |
| Honey flint with white spots | 2 (3%) |

Blade. A total of 21 blades was found. It represents 31% of the total assemblage. Most blades are characteristic of pressure-flaking technology; regular, straight and unidirectional scar patterns trapezoidal in cross-section. However, percussive blades were also found. 19 of them are unretouched blades. Most of them are retouched blades (Fig.IV.30:3,8). One of them has marginal retouch and probably used as a perforator (Fig.IV.30:4). The relationship between blade lengths and widths is seen in Fig.IV.32. According to the graph, the length of complete and incomplete pieces ranges between 2.0 cm to 4.4 cm and the width ranges between 0.7 cm to 2.0 cm.

Yağcili

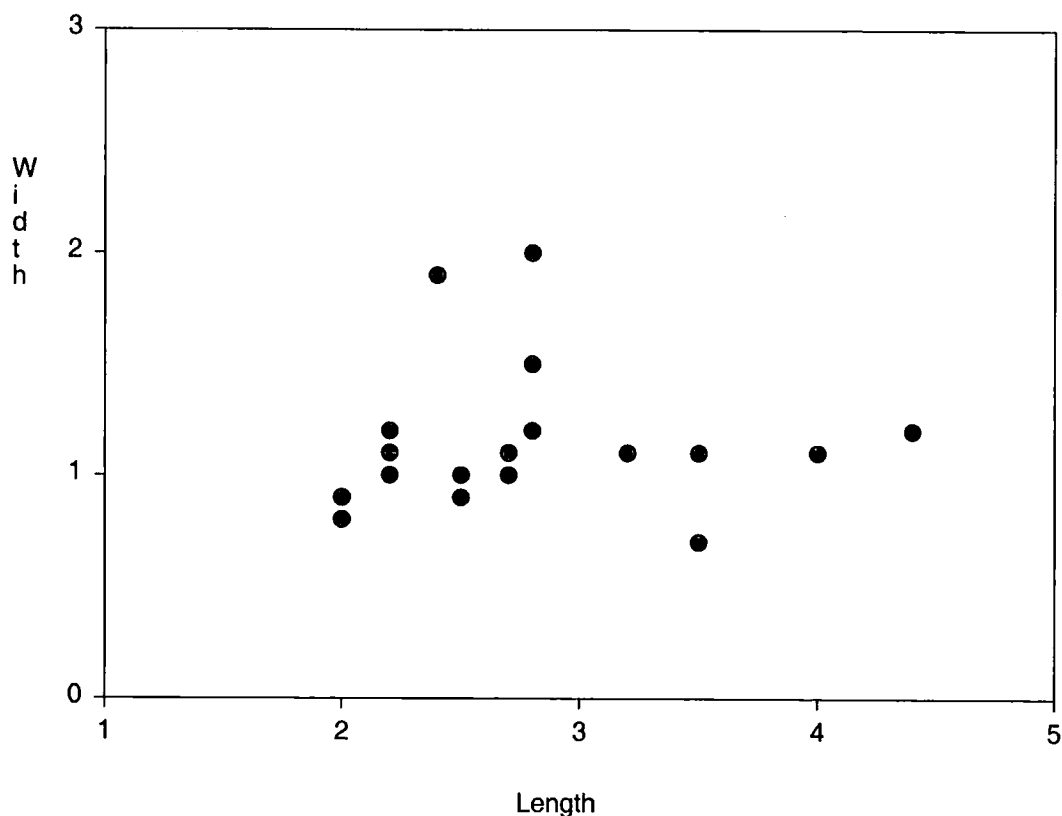


Fig.IV.32. Yağcili width vs. length (cm) of blade specimens.

Burin. Only 2 burins were found (Fig.IV.30:5,9). It represents 3% of the total assemblage. One was made from a distal end of blade and the other was made from a flake.

Flake. A total of 31 flakes was found. It represents 45% of the total assemblage. Most of them are plain flakes (Fig.IV.30:18). There are only a few retouched pieces. The retouch is usually marginal or irregular.

Scraper. Only 2 scrapers were found. It represents 3% of the total assemblage. One is an end-scraper on a flake and other is end-scraper on a blade (Fig.IV.30:13).

Microliths. A total of 3 were found: a segment (Fig.IV.30:11), a micro blade (Fig.IV.30:12) and a micro perforator (Fig.IV.30:7). Only the micro blade is retouched.

2. Avariz / Kumocağı. A total of 87 chipped stone implements were investigated in Avariz. The raw materials used in the chipped stone industry consist mostly of Quartz (50 pieces) and Flint (22 pieces). Chalcedony (5 pieces) and other undetermined siliceous stones (10 pieces) are also present. Types of flints from Avariz are seen in Table IV.15.

Table IV.15. Flint types of Avariz / Kumocağı chipped stone assemblages.

| Flint Type | No |
|---------------------------------------|---------|
| Milky-brown flint | 5 (22%) |
| Black flint with white cortex | 1 (5%) |
| Honey-flint | 5 (22%) |
| Honey-flint with white spots | 4 (18%) |
| Dark Brown flint | 1 (5%) |
| Yellow flint covering with black dots | 6 (28%) |

Core. A total of 5 cores was found. It represents 6% of the total assemblage. All cores are flake cores (Fig.IV.30:14).

Blade. A total of 10 blades was found (Fig.IV.30:16-17). It represents 12% of the total assemblage. Most blades are tabular core blades. Only 6 of them are retouched blades. There are also percussive blades.

Scraper. A total of 12 scrapers was found. It represents 14% of the total assemblage. 5 of them are end-scrapers on flakes (Fig.IV.30:21). 6 scrapers are side scrapers on flakes (Fig.IV.30:23) and only one round scraper was found (Fig.IV.30:22).

Burin. Only 2 burins were found. It represents 3% of the total assemblage. One was made from a distal end of a blade (Fig.IV.30:15) and other was made from a flake.

Flake. A total of 52 flakes was found (Fig.IV.30:18,24). It represents 60% of the total assemblage. Only a few of them are retouched.

Microliths: Only one microlith was found. It is a retouched segment (Fig.IV.30:19-20).

3. Köprübaşı. A total of 83 chipped stone implements were investigated in Köprübaşı. The raw materials used in the chipped stone industry consist mostly of quartz (11 pieces), flint (8 pieces) and chalcedony (5 pieces). Other undetermined siliceous stones (59 pieces) are also present. Types of flints from Köprübaşı are seen in Table IV.16.

Table IV.16. Flint types of Köprübaşı chipped stone assemblages.

| Flint Type | No |
|---------------------------------------|-----------|
| Milky-brown flint | 4 (50%) |
| Honey-flint | 2 (25%) |
| Honey-flint with white spots | 1 (12.5%) |
| Yellow flint covering with black dots | 1 (12.5%) |

Core. A total of 5 cores was found. It represents 6% of the total assemblages. Only one of them is the multi-platform tabular blade core, others are flake cores. There are also two crescent-shaped removed piece to produce a striking platform. (Fig.IV.30:25)

Blades. A total of 5 blades was found. It represents 6% of the total assemblages. All are retouched blades (Fig.IV.30:27)

Burin. Only 2 burins were found. It represents 3% of the total assemblages. Both were made from flakes (Fig.IV.30:32)

Scrapers. A total of 3 scrapers was found. It represents 4% of the total assemblages. 2 of them are end-scrapers on blade (Fig.IV.30:26) and one of them was a side-scraper on a flake.

Flake. A total of 66 flakes was found. It represents 80% of the total assemblages. Most flakes are unretouched. Only a few retouched flakes (Fig.IV.30:29).

Microliths. Only one microlith was found. It is a retouched segment (Fig.IV.30:30).

CHALCOLITHIC: The Chalcolithic chipped stone industry were investigated at three settlements - Kavakli 1, Yumurta Tepe and Tepeyani (Plate XIV). All chipped stone implements presented here come from our 1995 and 1997 surveys. A total of 141 chipped stone implements was investigated.

1. Kavakli 1. A total of 45 chipped stone implements was investigated in Kavakli 1. The raw materials used in the chipped stone industry consist mostly of Flint (42 pieces). 1 Chalcedony, 1 Quartz and 1 Red Radiolarite or Jasper is also found. Types of flints from Kavakli 1 are seen in Table IV.17.

Table IV.17. Flint types of Kavakli 1 chipped stone assemblages.

| Flint Type | No |
|-------------------------------|----------|
| Milky-brown flint | 31 (73%) |
| Black flint with white cortex | 5 (12%) |
| Honey-flint | 6 (15%) |

Core. A total of 5 cores was found in Kavakli 1. It represents 12% of the total assemblage. Only one of them is the multi-platform tabular blade core, the others are flake cores.

Blade. A total of 16 blades was found. It represents 36% of the total assemblage. Only 3 of them are retouched blades, one of them has semi-flat retouch (Fig.IV.31:11). Most blades are characteristic of pressure-flaking technology. The relationship between some blade lengths and widths is seen in Fig.IV.33. According to the graph, the length of complete and incomplete pieces ranges between 1.0 cm to 4.7 cm and the width ranges between 0.9 cm to 2.1 cm.

Kavakli 1

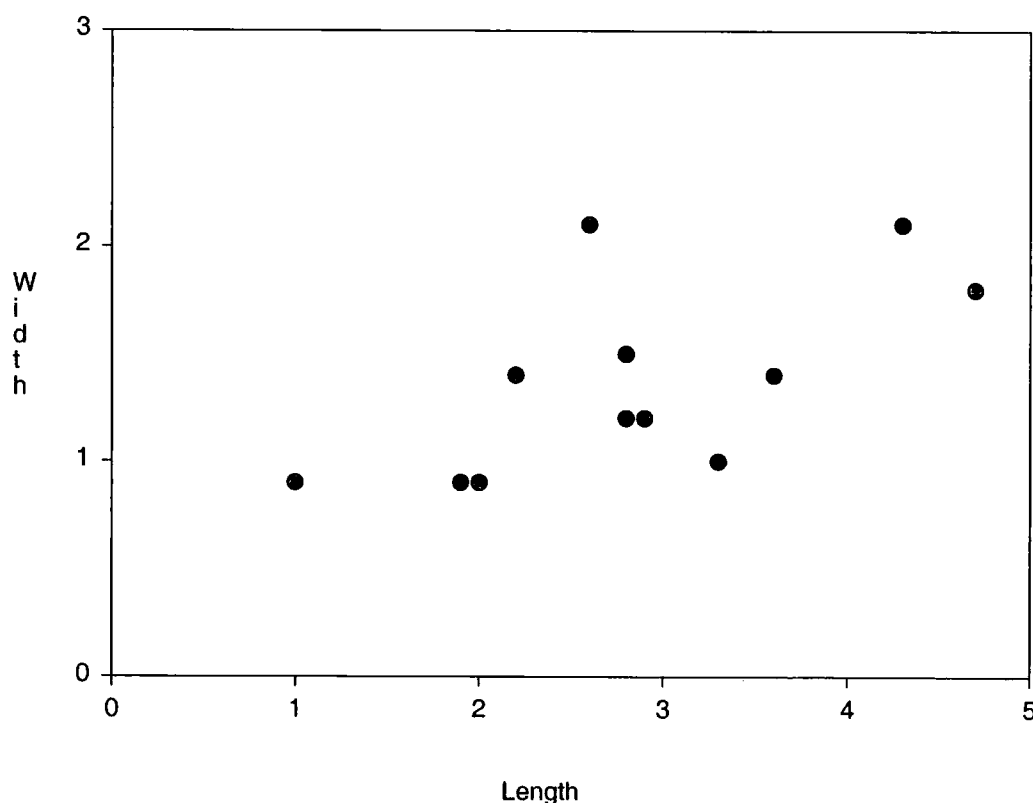


Fig.IV.33. Kavakli 1 width vs. length (cm) of blade specimens.

Scraper. Only 3 end-scrapers on flake were found (Fig.IV.31:13). There is also one side-scraper (Fig.IV.31:12). Scrapers represent 9% of the total assemblage.

Burin. Only one burin was found (Fig.IV.31:14).

Flake. A total of 20 flakes was found. It represents 43% of the total assemblage; only a few of them were retouched.

2. Tepeyani. A total of 56 chipped stone implements was investigated in Tepeyani. The raw materials used in the chipped stone industry consist mostly of Flint (44 pieces). 5 pieces of Chalcedony and 7 other undetermined siliceous stones are also present. Types of flints from Tepeyani are seen in Table IV.18.

Table IV.18. Flint types of Tepeyani chipped stone assemblages.

| Flint Type | No |
|-------------------------------|----------|
| Milky-brown flint | 24 (54%) |
| Black flint with white cortex | 2 (4.5%) |
| Honey-flint | 4 (10%) |
| Honey-flint with white spots | 12 (27%) |
| Dark Brown flint | 2 (4.5%) |

Core. A total of 5 cores was found. It represents 9% of the total assemblage. All are single platform cores. 4 of them are flake cores and one of them is a flake core on a former blade core (Fig.IV.31:6).

Blade. A total of 31 blades was found. It represents 56% of the total assemblage. 5 of them are end-scrapers on blade type, and 4 of them have retouch (Fig.IV.31:5). 22 pieces of blades are mostly retouched blades and most of them are characteristic of pressure-flaking technology (Fig.IV.31:4, 9-10). The relationship between blade lengths and widths is seen in Fig.IV.34. According to the graph, the length of complete and incomplete pieces ranges between 2.2 cm to 5.5 cm and the width ranges between 0.9 cm to 3.0 cm.

Burin. Only one burin on flake was found (Fig.IV.31:7).

Flake. A total of 17 flakes was found. It represents 31% of the total assemblage. Only a few are retouched flakes (Fig.IV.31:8). The retouches are usually marginal and irregular.

Tepeyani

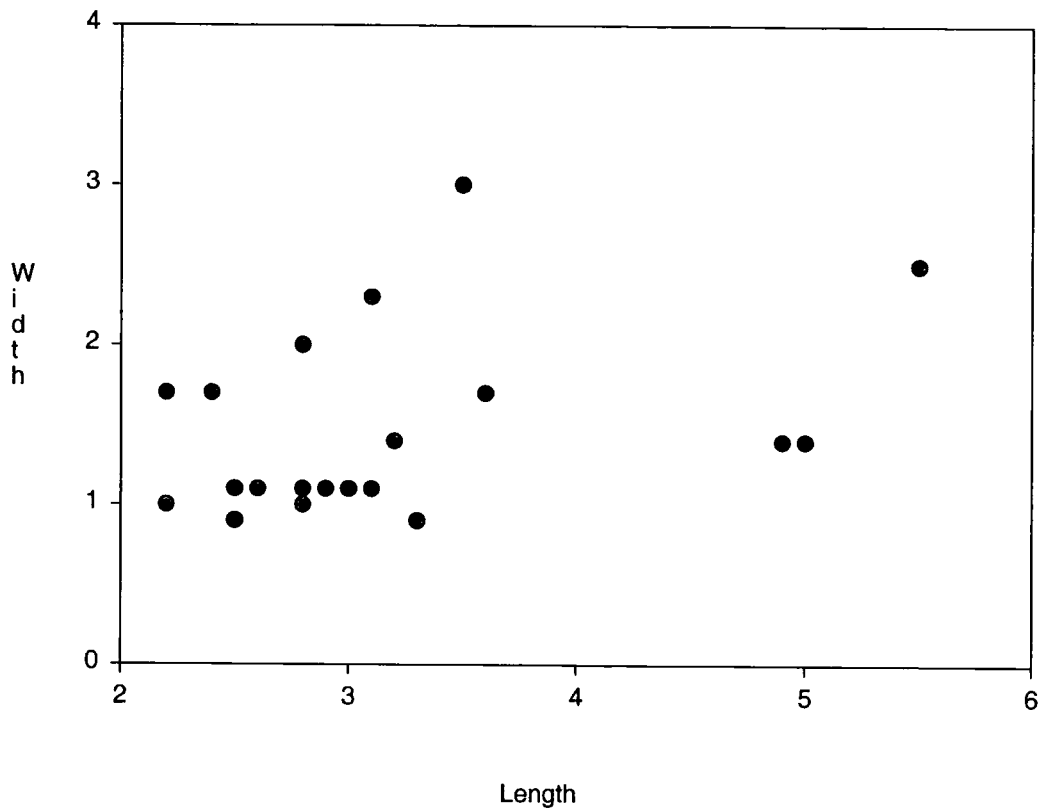


Fig.IV.34. Tepeyani width vs. length (cm) of blade specimens.

3. Yumurta Tepe. A total of 40 chipped stone implements were investigated in Tepeyani. The raw materials used in the chipped stone industry consist mostly of Flint (38 pieces). 1 piece of Chalcedony and 1 other undetermined siliceous stone are also present. Types of flints from Yumurta Tepe are seen in Table IV.19.

Table IV.19. Flint types of Yumurta Tepe chipped stone assemblages.

| Flint Type | Count |
|-------------------------------|----------|
| Milky-brown flint | 24 (63%) |
| Black flint with white cortex | 1 (1%) |
| Honey-flint | 15 (36%) |

Core. Only one tubular blade core was found.

Blade. A total of 26 blades was found. It represents 65% of the total assemblage. 8 of them are end-scrapers on blade type, and 9 of them have retouch on the edges. Some of them are relatively big blades (6.7 cm), and one blade has high retouch (Fig.IV.31:1-3). 17 pieces of blades are unretouched blades and most of them are characteristic of pressure-

flaking technology. The relationship between blade lengths and widths is seen in Fig.IV.35. According to the graph, the length of complete and incomplete pieces ranges between 6.8 cm to 1.2 cm and the width ranges between 3.5 cm to 0.8 cm.

Flake. A total of 5 flakes was found, and all are unretouched flakes.

In the Chalcolithic settlements of Karabaş and Kavaklı 2, end-scrapers on large blades were also found (Fig.IV.31:18). These blades were made of honey flint.

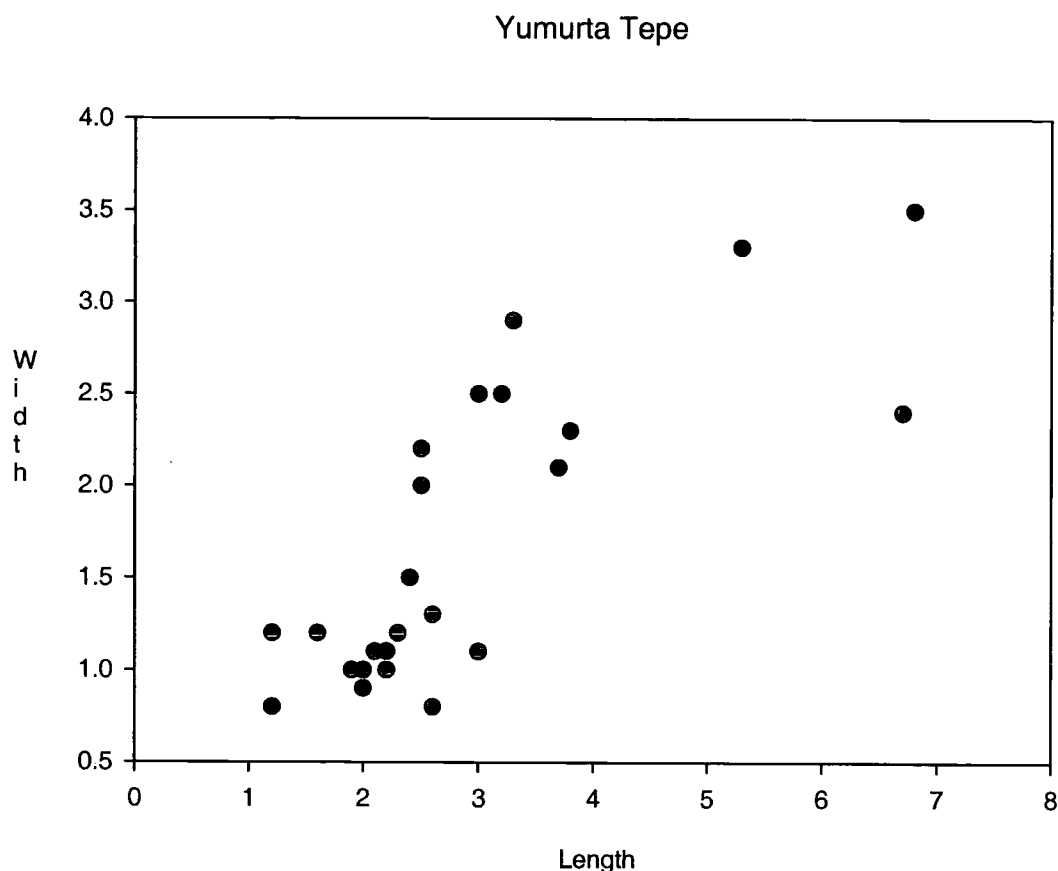
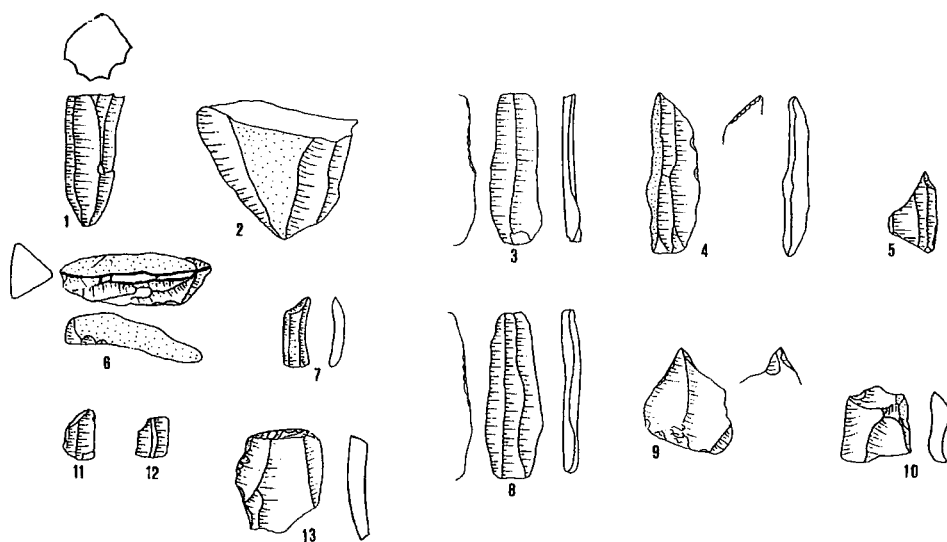


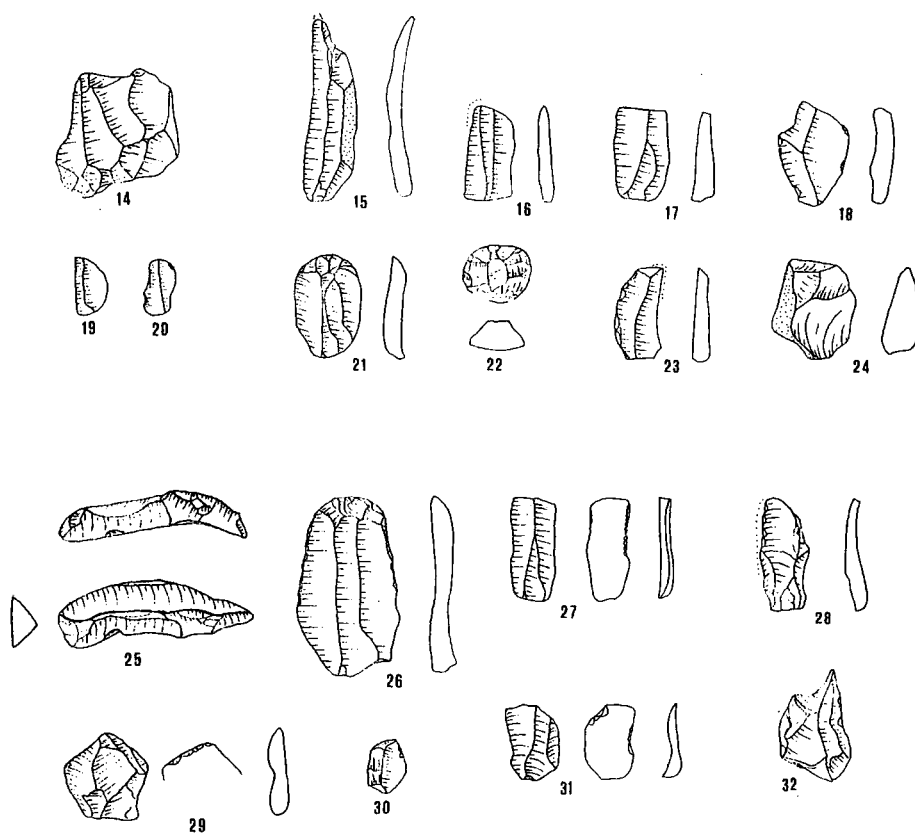
Fig.IV.35. Yumurta Tepe width vs. length (cm) of blade specimens.

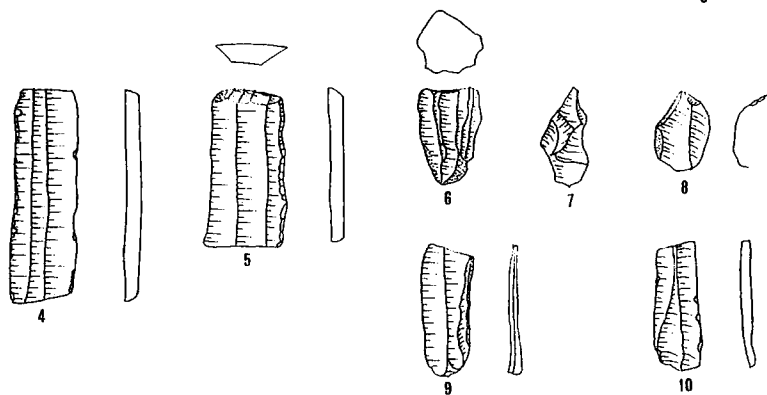
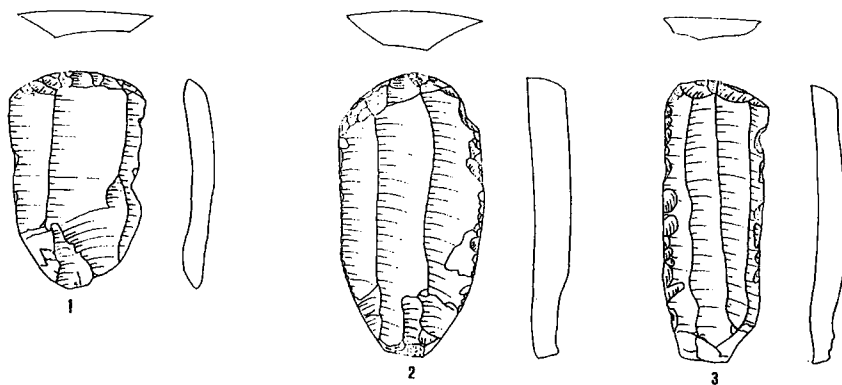
IV.B.5. Analysis and Typological Analogies

During the Neolithic period of Eastern Thrace, the raw materials used in the chipped stone industry consist mainly of quartz and other siliceous rocks in the Tunca basin. However, the settlements located in the area along the Southern fringes of the Istranca Mountains used mainly flint as a raw material. The Neolithic people of the Edirne region preferred to use local flints. However, honey flint probably from Bulgaria was also used. Honey flint is of better quality than milky-brown flint.



0 1 2 3 cm





0 1 2 3 cm

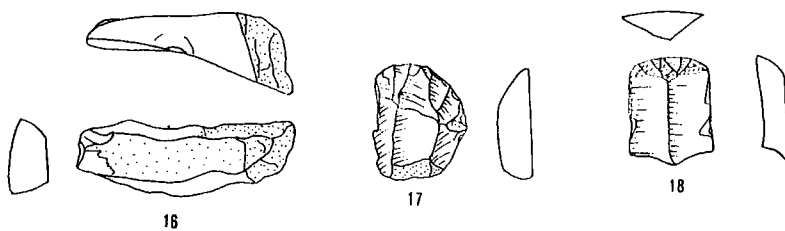
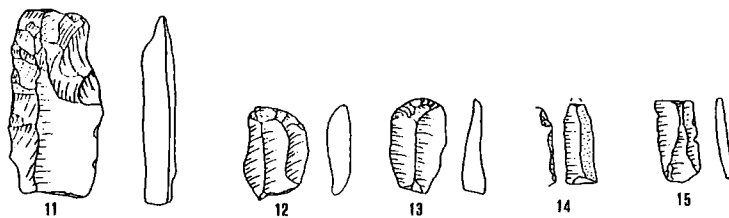


Fig.IV.30. Neolithic chipped stone implements from Yağcili (1-13): 1-2 core, 3,4,8 retouched blades, 5,9 burin, 10 flake, 13 end-scraper, 7,11,12 microlith 6. crescent-shaped removed piece to produce a striking platform. Avariz / Kumocağı (14-24): 14 core, 16 burin, 16,17 blade, 18,24 flake, 21 end-scraper, 22 round scraper, 23 side scraper, 19-20 microlith. Köprübaşı (25-32): 26 end-scraper, 27-28 retouched blade, 29,31 flake, 32 burin, 25 crescent-shaped removed piece to produce a striking platform.

Fig.IV.31. Chalcolithic chipped stone implements from Yumurta Tepe (1-3): 1-3 end-scraper on blade. Tepeyani (4-10): 4,9,10 retouched blades, 5 scraper on blade, 6 core 7-8 burin. Kavaklı 1 (11-15): 11 blade with semi-flat retouch, 12,13 end-scraper, 14 burin, 15 retouched blade. Kavaklı 2 (16-18): 16 crescent-shaped removed piece to produce a striking platform, 17 end-scraper, 18. scraper on blade.

, During the Chalcolithic period, the raw materials used in the chipped stone industry consist mainly of flint. Compared to the Neolithic period, quartz and other siliceous stones were rarely used. Although local milky-brown flint provides the raw material for most of the Chalcolithic lithic assemblage in the Edirne region, honey flint is a small, but important component of most assemblages. Compared to the Neolithic period, there was an increase in the amount of honey flint in the Chalcolithic period. Honey flint comes to the area probably by exchange in Bulgaria.

The main characteristic feature of the chipped stone industry of the Early Neolithic period of South Bulgaria is a macroblade industry with or without high semi-steep retouch (Gatsov 2000). The length of these macro-blades is ca. 12-14 cm. A similar macro-blade industry was also found in Hoca Çeşme II in Turkish Thrace (Gatsov 2000). However, the Early Neolithic site of Hamaylitarla is characterized by a micro-blade industry. There are no detailed publications of the chipped stone industry in early Hoca Çeşme as yet. Similar micro-blade industries have also been found at Kaynarca in the Gelibolu Peninsula (Özdoğan 1986a) and Coşkuntepe in Troas (Seeher 1990).

All investigated Middle and Late Neolithic settlements in the Edirne region have produced flakes, and only a few of them were retouched. Some flakes can be referred to as débitage. The core processing related to the predominant exploitation of single-platform cores. In Avariz and Köprübaşı no blade cores were found. In Yağcili, both single and multi-platform cores were found, and there are very few prismatic blade cores. Untouched blades predominate. Comparable material for the Edirne region Neolithic chipped stone industry comes from Aşağı Pinar. The Middle and Late Neolithic chipped stone industry of Aşağı Pinar was investigated by Gatsov (1998; 2000). According to Gatsov: 'the receiving of blank was based on the exploitation of small flint nodules and plate concretions, whose length is usually between 5-7 cm. Very typical of this category are plate concretions for blades and bladelets. As a rule, the striking surfaces are situated on the narrowest side' (Gatsov 2000: 20). During the excavations, end-scrapers, burins, retouched blades and flakes etc. similar to those of the Edirne region were found. The Aşağı Pinar assemblage is also characterised by microliths. Micro-end scrapers, micro-perforators and geometrical microliths such as trapezes and segments predominated in the Karanovo III and III-IV levels of Aşağı Pinar (Gatsov 1998; 2000). Microlithic trapezes and segments were also found at Drama-Gerena in Southeast Bulgaria and a number of sites in the Balkans during the Middle and Late Neolithic periods (Lichardus and Gatsov et al. 2000). Microlithic segments were also found at the Neolithic settlements of the Edirne region.

The Chalcolithic period of the Edirne region is characterized by a blade industry. Most of the blades are characteristic of pressure-flaking technology. End-scrapers on blades are of characteristic type. The lengths of blades are 5-7 cm, and most of them have

retouch on the edges. All these blades are made of honey flint. These types of blades are characteristic for the Karanovo VI- Gumelnița Culture in the Balkans (Todorova 1989).

In the Maritsa region of Southeast Bulgaria, an Early Chalcolithic chipped stone industry was investigated at Dervishov Odzhak (Gatsov 1997). End-scrappers on retouched or unretouched blades and end-scrappers on flakes show similarities to Tepeyani, Kavakli 1 and Yumurta Tepe (Gatsov 1997: Fig.2;1,4,7,9,11,18).

The lack of large débitage and the low frequency of cores in the Neolithic and the Chalcolithic settlements in the Edirne region suggest that the initial preparation of material may have been conducted at source, presumably to minimise transportation costs, or the original pieces of raw material may have been small and unsystematically worked, or débitage has been missed because of unsystematic collection.

IV.B.6. Concluding Remarks

A study of the Neolithic and Chalcolithic chipped stone industries in the Edirne region is outlined above. It seems evident that during the Neolithic period, the raw materials used in the chipped stone industry consist of mainly quartz and flint. Both are local origin. However, honey-flint of Bulgaria comes also in this region. Chalcolithic period is marked by a decrease in the number of quartz implements, and an increase in flint implements, especially those of honey-flint. In the Middle and Late Neolithic period in the Edirne region, among the tools, flakes predominate, and blades are generally untouched. The Chalcolithic period is characterised by end-scrappers on retouched blades. Comparable blades come from the Karanovo VI-Gumelnița Culture in the Balkans.

IV.C. STONE AXES

IV.C.1. Introduction

The polished stone axe is a very significant tool type during the prehistoric period. The polished stone axe provided a central symbol within prehistoric society because it effectively linked a whole range of spheres of human activity (Tilley 1996: 114). The axe was a basic tool in subsistence, an important exchange item linking together communities, personal status and prestige in a community. Stone axes circulating within society had a worth, which would have been related to debt and kinship, and to the articulation of relationships between persons and groups (Thomas and Tilley 1993: 290). They had a significance, which is functional, and a meaning, which is concerned with the content of ideas and symbols. According to Tilley:

'the axe provided a durable symbolic medium for creating and maintaining social ties and dependencies through ritual and everyday activities' (Tilley 1996:114).

K. Kristiansen has argued that the axe links together agricultural production, exchange, ritual consumption and feasting (Kristiansen 1984: 79). Ethnographical studies show that the leader in lineage groups in the Pokou, Ussiai and Matankol people of the Admiralty Islands is in possession of the axe / adze and can also pass it on to his successor (Ohnemus 1998: 152). He holds the axe / adze in his hand while speaking and dancing in ceremony. On a sad occasion, such as a death in the tribe, the leader appears without his axe / adze. The axe / adze is also used in peacemaking talks or punishment. It stands for law and order, peace and joy. Among Australian Aboriginal societies, the stone axe was prominent in interpersonal relations, in the totemic system and in the wider belief system (Taçon 1991: 194). Axes have had aesthetic and symbolic value.

Axes probably had important roles in ceremonial activities. In the Papua New Guinea highlands, the largest axes were valued especially for ceremonial and display purposes (White and Modjeska 1978: 29). In the Mt. Hagen area, three major axe types were recognized: ceremonial, bride-price and work axes (Chappell 1987: 77). Ceremonial axes which were deliberately fashioned as objects of beauty. These axes are usually long, thin and finely finished. They were carried on ceremonial occasions and sometimes used in warfare. Bride-price axes are also well grounded and sharpened, but not as well as ceremonial axes. They were used only in bride-price payments and death compensation. Work axes were generally smaller and thicker than ceremonial and bride-price axes. They are not well ground. These axes were used for everyday tasks and were carried on ordinary occasions.

During the mortuary feast of the Sabarl Islanders of Papua New Guinea, the dead paternal clan publicly presents five ceremonial axes to its maternal clan heirs. In absolute secrecy, the axes are used to construct an effigy of the corpse of the honoured dead (Battaglia 1983: 291). The axes were put next to the dead against one another with the heads facing in the same direction. The corpse of axes is made by propping the handles against each other so the axes rest on their blades. They are said to represent a human body reclining in its grave. The axes and the dead become intertwined in the grave. Then, the dead was raised as it were from the grave and re-installed at the centre of reproductive life. This marks the beginning of his life as an ancestor and establishes him as a source of economic and spiritual aid for the living. The corpse is magically endowed with the power to reproduce axe blades; it becomes more than a representation of the ancestor, it becomes a concrete substitute for the 'child' as a reproductive unit of his / her society (Battaglia 1983: 298).

Axes may serve as points of reference for broader belief systems. Axes are found in ritual and funerary contexts, particularly in assemblages from megalithic monuments. In

Neolithic chamber tombs in Brittany, the deposition of particular types of stone axes is relatively restricted, especially those that had been obtained from great distances (Patton 1991). By passing from hand to hand, over the distance from their sources, each axe would have build up its own genealogy, as myths became attached to them (Kristiansen 1984:79). The tomb may act to fix all of those myths in one location. Axes were so deeply connected with the person that the history of axe and person becomes intertwined. Thus the burial of the axes introduced the presence of this person to the depositional context (Thomas and Tilley 1993: 293). In Neolithic chamber tombs in Brittany, some of the axes were deliberately broken (Thomas and Tilley 1993: 290-291). Axes may be regarded as having biographies, like persons. They are born (produced), exchanged and destroyed (die). As Chapman argued, the relationship between fragmented objects and persons is an important, interpretative link (Chapman 2000a). Axes were deeply connected with person and when the body dies, the axes were ritually destroyed. The axes from Tumulus-St. Michel were found in a deposit of ashes and burnt bone, and had been placed vertically (Patton 1991: 67). According to Patton, the ritual position of axes in tombs and also the carved representations of axes in tombs referred to a relationship with the ancestors, death and the past (Patton 1991:70).

In the centre of the chamber at Mané-er-Hroëk, Brittany, a large ring of jadeite and a huge axe were arranged so that its butt penetrated the ring. Behind the blade of the axe were two beads and behind this were a perforated axe and a further bead. All these axes and beads are set along a north-south axis. According to Thomas and Tilley, the sexual symbolism is here quite explicit that all axes represent phalluses (Thomas and Tilley 1993: 291-293). Thus the axe may in some contexts be seen as a male attribute. Among the Australian Aboriginal groups in the Yir Yoront of North Queensland and Western Arnhem Land, stone axes and other tools were recognized as belonging to men, especially older man, and embodied their ancestral power (Taçon 1991: 194-195). The women and young must borrow the axe from the older male. In the borrowing, the status, position and power of older males were reinforced. Aborigines also believed that the axes are formed from ancestral bones. In Sabarl Island society, the axes are objectified persons and identified with the bodies of the persons making them (Battaglia 1983: 295). The axe blade is called "Hinona"; the "content" or "vital substance" of the valuable. In the context of the physical person, 'Hinona' is the term for 'genitals' and 'right hand'; a symbolism associated with economic and biological reproduction. The axe blade broadly represents the reproductive potential of the singular person (Battaglia 1990: 133; Tilley 1999: 73). Witchcraft is said to eat the hinona away. As the term for the genitals "hinona" also refers to reproductive energy. In this manner, "hinona" is a term that provides the metaphorical connection between persons and ceremonial axes (Battaglia 1983: 293).

Ethnographical studies show that the ownership of resources and quarries was extremely varied (Chappell 1987). Even where resources were recognized as the property of a special group, outsiders could generally acquire permission to use them. Production was often driven by the roles that certain objects played in exchange, where patterns of circulation served to mediate kinship ties, socio-political alliances or ritual obligations (Chappell 1987). In Australia, Aboriginal axes were made of greenstone from the Mt. William quarry (McBryde 1984). The Mt. William deposits were owned by a particular group of the Wurundjeri tribe and only members of a certain family were permitted to work them. Very complex kinship relations were involved in the determination of the exact persons who had rights to work stone at Mt. William (Torrence 1986: 54-55). In New Guinea highlands, men who live near a source procure and work the stone for their own use, either utilitarian or ceremonial. Others obtain their supplies of those materials through exchange (Chappell 1987: 59).

Factories or manufacturing areas are places where craft specialists perform a limited set of activities on a frequent, perhaps regular basis in order to produce items for exchange with other group of people. Stone axe factories or manufacturing areas were recently found in Turkish Thrace. Although the field data are not complete, typological and petrological investigations of prehistoric stone axe factories show us the operational chain for prehistoric axe manufacture and the raw material from which the axes are made.

IV.C.2. Prehistoric Axe factories in Turkish Thrace.

In 1989, a large number of roughouts was sold to Istanbul Museum by a farmer from the Sarköy region. Scholars working in Eastern Thrace were looking for a long time for the site from which these roughouts came. In 1995, the stone axe factory of Yartarla was found by M.A. Işin, director of Tekirdağ Museum, and he demonstrated that the roughouts held in Istanbul Museum come from Yartarla. Later, two more axe factories or manufacturing areas - Hamaylitarla (Buruneren)⁶ and Fener Karadutlar were found by O. Özbek in the Şarköy region. Since intensive archaeological surface surveys have not yet been conducted in the Şarköy region, it is possible that more such sites exist.

The stone axe factory of Yartarla is located ca. 14 km Northwest of Sarköy, ca. 3 km Northeast of the village of Sofuköy. It is situated on a high terrace of the Kavak Suyu River. The Kavak Suyu River rises in the Ganos Mountain, and descends Westwards to the Gulf of Saroz. It has a flat, marshy, alluvial mouth. The Kavak Suyu runs through wide gorges, with steep sides that in some places rise vertically from the river, reaching a height

⁶ Hamaylitarla (Buruneren) was first discovered by M.A. Işin in the early 1990s. This site is not the same site that M. Özdoğan published in 1986 (Özdoğan 1986a). A stone axe from same area was also found in the 1930s, and now stored in the Museum of Anatolian Civilizations at Ankara (Kurtoglu 1938). It is reminiscent of EBA battle-axes.

of 200-250 m, on which Yartarla was formed. Hamaylitarla (Buruneren) and Fener Karadutlar are situated on well-watered lowlands at the Southern foot of Mount Helvacı and Sarıkayalar. Hamaylitarla (Buruneren) is located ca. 17 km West of Şarköy and ca. 7 km west of the village of Kizilcaterzi. Fener Karadutlar is situated on Cape Ince, on the Northern shore of the Sea of Marmara, ca. 7 km North-West of Hamaylitarla. The southern foot of Mount Helvacı, Kazanağzi stream and a number of small seasonal streams run into the Sea of Marmara, constituting flat, fertile cultivated land (Fig.IV.39).

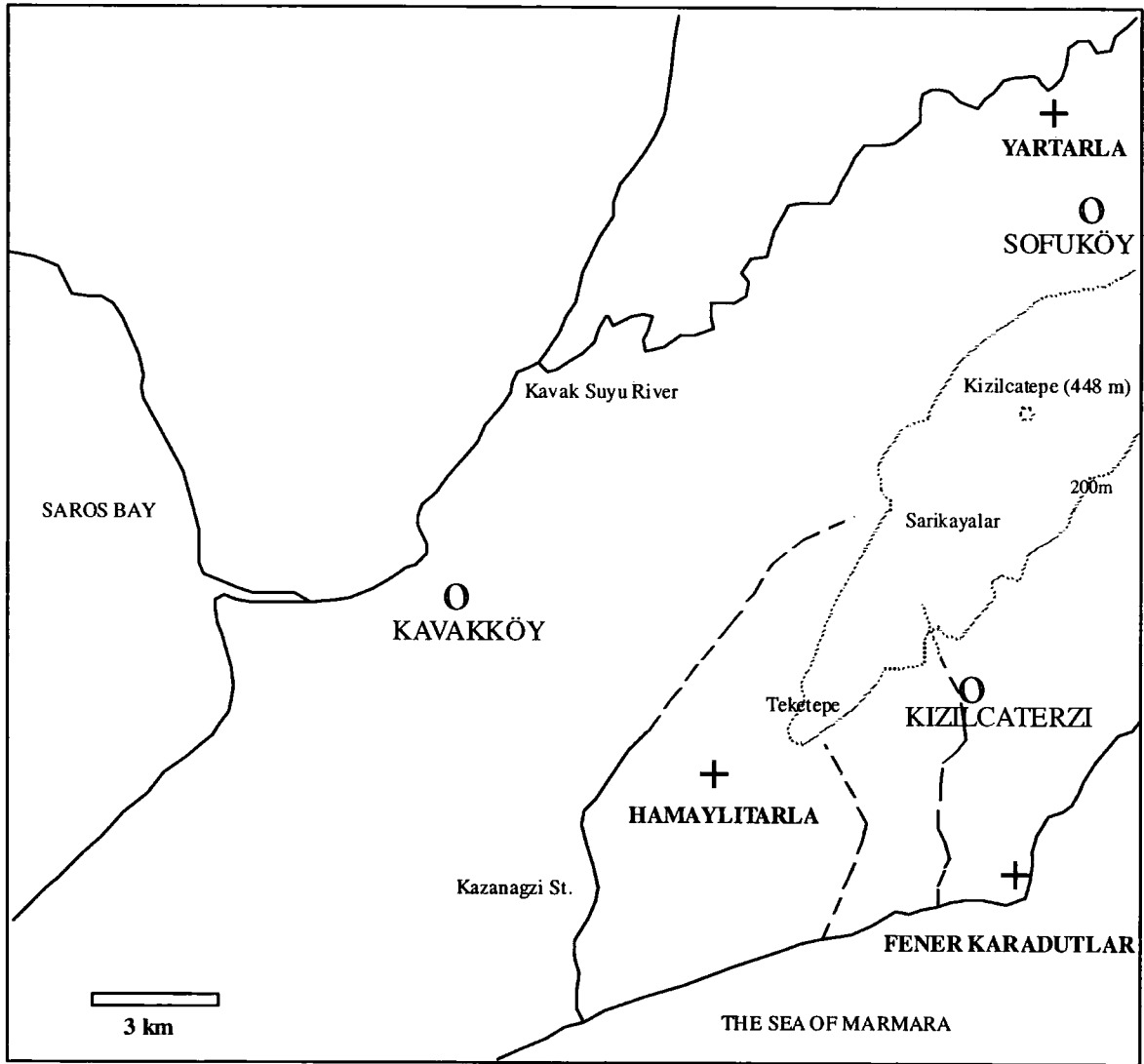


Fig.IV.39. Location of axe factories in the Şarköy region.

All axe factories were found associated with prehistoric settlements. In all examples, roughouts, flakes and hammerstones were found in and around prehistoric settlements (Plate XV). Most of roughouts are waste material, which broken during the production stage. The weight of roughouts varies from 0.4 kg to 1.0 kg (Özbek 2000). The form of the roughouts indicates that two types of axes were produced in the factories - a large, oval, symmetrical axe with rounded-butt and a thin-butt slender axe (Plate XV). According to

Özbek, they should be regarded as an adze / axe rather than a symmetrical axe⁷ (Özbek 2000). Hammerstones are generally spherical. Özbek observed that broken roughouts were transformed into hammerstones (Özbek 2000). The material recovered in the axe factories consisted almost entirely of flakes. The weight of the flakes varies from 0.2 kg to 0.8 kg (Özbek 2000).

Among the axe factories, only Hamaylitarla has been intensively investigated. The stone axe factory of Hamaylitarla is spread over 250 square meters. An area of 70 x 70 m was investigated using alternately spaced 9 10 x 10 m quadrates. A total of 36 axe roughouts, 8 hammer stones and more than 100 flakes were collected. Hamaylitarla gives a density of 5 roughouts per 10 x 10 m quadrat and ca. 20 flakes per 10 x 10 m quadrat. In Hamaylitarla, the settlement measures about 120 x 120 m. The majority of the pottery was dated to the Early Neolithic period. Early Bronze Age and Hellenistic-Roman sherds also occur in smaller quantities.

IV.C.3. Axe-manufacturing Processes

A general understanding of manufacture is the “chaîne opératoires”, which define a number of stages of production as I mentioned above. Ethnographical studies among the Australian Aboriginal groups and the tribes of Indonesia and Papua New Guinea highlands gave important information about axe-manufacturing processes (Blackwood 1950; Dickson 1981; Pétrequin and Pétrequin 1994 ; Pétrequin et al. 1998; Hampton 1999). Seven technological steps are followed by Unda and Kimyal people of Irian Jaya, Indonesia; 1. Locate a suitable boulder core. 2. Break the boulder core. 3. Reduce large pieces to manageable sizes. 4. Shape preform bifaces. 5. Dull edges and grind platforms. 6. Detail fine-flaking. 7. Grind finely flaked bifaces to finished adze blades (Hampton 1999: 257). For procedure 4, each toolmaker used two or three hammerstones. Parallel or longitudinal removals are more favored (Pétrequin et al. 1998: 287). Grinding processes occur near water. Sometimes toolmakers set their grinding stones by the front of their houses and add water (Hampton 1999: 272; Blackwood 1950: 15). The specific knowledge possessed by axe-makers enabled the manufacture of axes.

Axe-manufacturing processes in axe factories in Turkish Thrace were investigated by O. Özbek (2000). He has observed an intensive practice of knapping and pecking. The rock is obtained from the source as boulders and knapping takes place with the help of a hammer stone until a “pre-form” is realized. Again, using a hammerstone the definitive shape is obtained by pecking. This “pre-axe” form has a definitive shape but the tool still has a rough surface. The raw material is very hard and difficult to work on. It is impossible

⁷ According to Semenov, an axe is recognized by its symmetrical profile while an adze by its unsymmetrical profile (Semenov 1970:126).

to polish right after knapping. In many examples, whole surface of axes were intensively pecked. Finally, the piece is polished and the blade is sharpened. It seems always to have been assumed that production of roughouts usually took place near the source of raw materials, with the final polishing and sharpening occurring on settlements.

On the basis of ethnographical studies in Irian Jaya, Indonesia, Pétrequin et al. have constructed a series of models of prehistoric technological complexity (Pétrequin et al 1998:287). 1. the direct polishing of small, naturally pre-formed blocks; 2. knapping by longitudinal removal on small blocks whose natural occurrence was favorable; 3. knapping by transverse removal on small blocks whose naturally occurring was favourable; 4. the thinning of small blocks by longitudinal and transversal removals; 5. the debitage of longitudinal blades from the edge of a large block, worked as a core. There is no evidence for model 1 in the stone axe factories of Turkish Thrace. However, models 4 and 5 are much more common.

IV.C.4. Raw material and Source

Petrological analysis of some 10 specimens in each of the axe factories of Eastern Thrace show that all the axes are manufactured from the same rock: metabasite (Özbek and Erol, in press). This rock is greenish grey in colour with white dots. It contains iron oxide veins. The source of metabasite is the Western outcrops of the Ganos Mountain. The Ganos Mountain extends from Northeast to Southwest, with steep towards the Sea of Marmara. Its highest point is at İkizcebaşı with an elevation of about 702 meters. The source of the metabasite used for stone axes occupies the Western part. According to Özbek, the occurrence of metabasite in the outcrops of Ganos Mountain is not abundant (Özbek 2000). The rock can be obtained as boulders from many different parts of the Western outcrops of Ganos Mountain. The stone axe factories of Hamaylitarla and Fener Karadutlar are situated on the source. However, Yartarla is about 3 km from the source. It seems always to have been assumed that there are two types of quarries for localizing stone. In the first case, rocks outcropping on the surface are reduced to flakes and cores by block-on-block percussion techniques (Torrence 1986: 51). At the second type of quarry, the desired raw material outcrops below the surface and it is therefore necessary to dig pits to extract it. According to Özbek, only the first case applies for the Sarköy factories (personal communication).

IV.C.5. Distribution of Stone Axes

The distribution of goods from sources to people desiring them is an important function of the exchange system. According to Hodder: 'exchange involves the transfer of

items that have symbolic and categorical associations. Within any strategy of legitimation, the symbolism of objects is manipulated in the construction of relations of dominance. The exchange of appropriate items forms social obligations, status and power, but it also legitimates as it forms. A fully contextual approach to exchange must incorporate the symbolism of the objects exchange' (Hodder 1982a: 209). Hodder's idea was influenced significantly by both the pioneering study of Malinowski (1922) in "kula" exchange system of Melanesia, and by the work of Mauss in gift exchange (1925). These ideas were further developed by Sahlins (1972). A gift was a gesture and a bond, imposing obligations on both parties, especially on the recipient. Individual X would establish or reinforce a relationship with individual Y by means of a gift, a value object that would pass from the hands of X to those of Y. The overseas contacts of some islands in Melanesia centred on the ceremonial exchange with their exchange partners within the "kula". "Kula" is an exchange network (Leach and Leach 1983). Exchanges such as these, where the transfer of specific objects as gifts is only one part of relationship with other obligations and with other activities, such as feasting, are said to take place within a framework of reciprocity. Both Mauss and Sahlins recognized that exchange in non-Western societies is really a form of diplomacy, and for this reason it cannot be understood in purely 'economic' terms. Exchange plays a central role in mediating marriage ties, kinship bonds and alliances, and is crucially important in competition for status. In this sense it is deeply implicated in the classification and circulation of people (Bradley and Edmonds 1993: 12). Exchange also has a strategic role, for giving can be a way of inflicting dept. Every gift presupposes another in return, and lasting differences of social position may result when debtors are unable to discharge their obligations (Gosden 1989). The gift requires future reciprocation, and thus symbolises a lasting obligation over time (Barrett 1989: 308). By passing from one person to another, the exchanged object acquires a history which refers not only to the past and present order of social relations, but also to future ties and obligations. Exchange is thus an important medium through which debts and obligations are built up (Edmonds 1995). Torrence argued that items might be exchanged as unchanged raw materials, partially modified preforms, or as completed tools (1986: 5). All the separate stages in this very general system - acquisition, production, distribution (exchange) and use - will be interrelated such that behaviour in one sphere partially causes and to some degree is caused by behaviour in another (Torrence 1986:6).

Clark suggests that a system of gift exchange was in operation in the British Neolithic axe trade (Clark 1965; 1989: 194). Patton argued that the axe could become a key symbol in an ideological system concerned to stress inter-generational bonds and obligations in relation to ritual practice and the ancestors (Patton 1991: 71). According to Bradley and Edmonds, the movement of stone axes cannot be studied in terms of modern

economic principles. What we call the axe trade was linked to broader questions of communication and control (Bradley and Edmonds 1993: 205).

In Turkish Thrace, petrological investigations of the stone axes from excavated sites, such as Hoca Çeşme, Fikirtepe, Toptepe and Aşağı Pinar and surface collections are still in progress. Only results from the Early Neolithic site of Hoca Çeşme, ca. 85 km east of Şarköy, showed that the stone axes were made from metabasite, probably from the Şarköy sources.

IV.C.6. Dating Prehistoric Stone Axe Factories

Although hundreds of stone axes are being discovered at excavations each year in the Balkans and Anatolia, until now no prehistoric axe factories have been found. However, at the site of Divostin in Serbia, numerous unfinished axe specimens indicate the method of manufacture. In Divostin phase II, a working floor with roughouts, drilling pieces, flakes and also a large pit filled with flakes of roughouts were found (Prinz 1988: 257-259 and Plan IIIa). This concentration, Sector B, seems to indicate an area where stone axes were manufactured. Divostin phase II is dated to the Late Vinča Culture. In Obre II in Bosnia, the regular shapes of sixteen stone axes were found between two stone slabs in sounding D, together with two big flint knives, three bone awls and two round baked clay objects. This has been interpreted as an axe-making area (Benac 1973: 82 and Fig 13a). A similar axe-making area was also found in sounding VII at Obre II (Benac 1973: 82). Obre II, sounding D is dated to the Classic Butmir Culture. However, the dates from sounding VII in Obre II fall earlier. The excavations at Selevac in Serbia, an axe-making area was found outside the House 1, dating ca. 5020-4600 / 4540 cal. BC (Voytek 1990). In Bosnia, at the site of Kalosević-Malo Brdo a large number of flaked stone axe roughouts was discovered (Chapman 1976: 146). The pottery on the site was found to date to the Late Vinča Culture. Kalosević-Malo Brdo is probably a prehistoric axe factory; however, there are, as yet, no detailed investigations.

The dating of the axe factories of Turkish Thrace is problematic. No complete axes were found in the factories. In the settlement of Yartarla, Late Chalcolithic and Early Bronze Age sherds were collected. The settlement of Fener Karadutlar was completely destroyed by a Byzantine church; only a few Early Bronze Age sherds were found. In the settlements of Hamaylitarla (Buruneren), early Neolithic sherds together with a few Early Bronze Age sherds were collected. It seems evident that, without excavations, it is difficult to date these stone axe factories. Petrological investigation of polished stone axes from excavated sites and surface collections in Eastern Thrace is still in progress. On the other hand, early results from the Early Neolithic site of Hoca Çeşme, near the town of Enez showed that the polished stone axes of Hoca Çeşme were made from metabasite and

probably from the Sarköy region. Pottery similar to that of Hoca Çeşme was also found in Hamaylitarla. We assume that more axe factory sites exist in the region and probably the axe factories were used from the beginning of the Neolithic to the Bronze Age.

IV.C.7. Axes Found During the Survey in the Edirne Region.

During our surveys in the Edirne region, a total of 21 stone axes was found, 9 of which were complete (Table IV.20 ; Plate XVI). The axes found in the Edirne region fall into 2 categories; large axes and small axes. At the basis of their shape, they can be divided also into sub-categories;

1. Large axes. (average length is 8-10 cm).

1a. Straight splayed sided axe with oval cross-section and rounded butt (Fig.IV.38:1).

1b. Parallel sided axe with oval cross-section and rounded butt (Fig.IV.36:1).

1c. Perforated axes (Fig.IV.36:3).

2. Small axes. (average length is 4-5 cm).

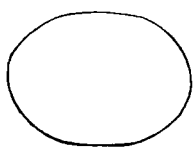
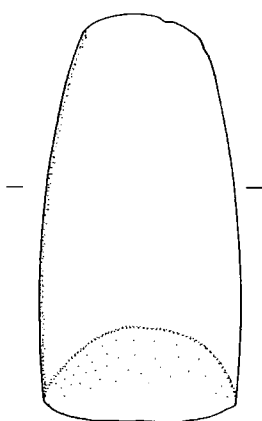
2a. Straight splayed sided axe with narrow oval, flattened sided cross-section and rounded butt (Fig.IV.36:5-7).

2b. Straight splayed sided axe with narrow oval, flattened sided cross-section and flat butt.

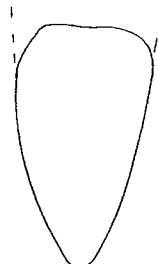
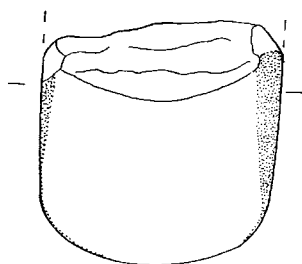
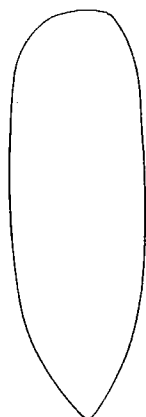
Table IV.20. Distribution of axe types by sites.

| NAME OF THE SITE | TOTAL AXE | TYPE |
|-------------------|-----------|---------------|
| Köprübasi | 2 | 2a |
| Kumocagi / Avariz | 1 | 1a |
| Kavakli 2 | 1 | 2a |
| Yagcili | 8 | 1a, 1b and 2a |
| Kocatepe | 1 | probably 2a |
| Tepeyani | 3 | 2a, 2b and 1c |
| Yumurta Tepe | 3 | 1b and 1c |
| Arpaç | 1 | probably 2a |
| Karabas | 1 | probably 1a |

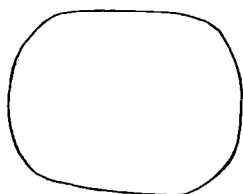
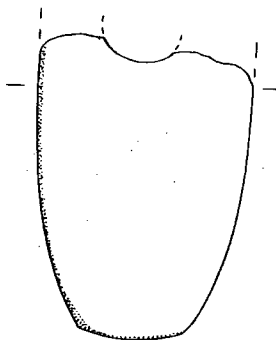
Most important for typological classification of the axes are shape, cross-section and profile. The shape is probably the most appropriate parameter to use in classifying axes. However, it should be realized that stone axe form was not static but changed through time as a result of use and wear (e.g. White and Modjeska 1978: 29). For the Edirne axes, the most common shape is a straight splayed side. There are many different



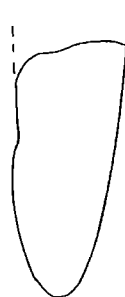
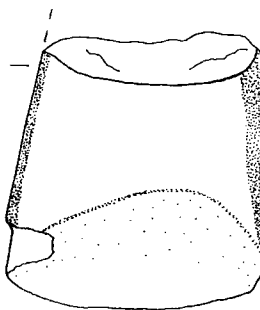
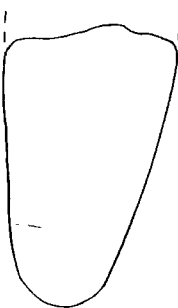
1



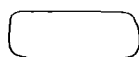
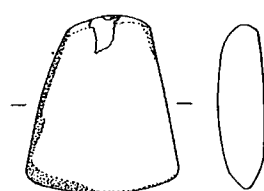
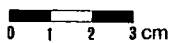
2



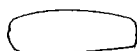
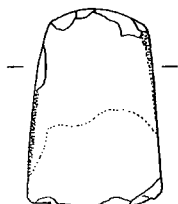
3



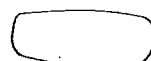
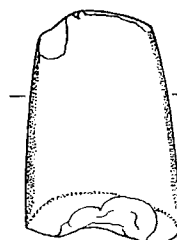
4



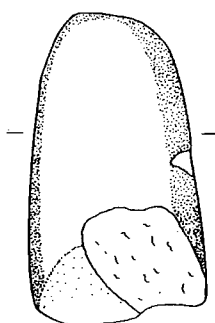
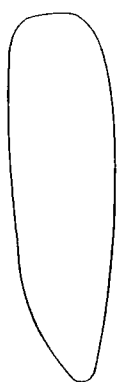
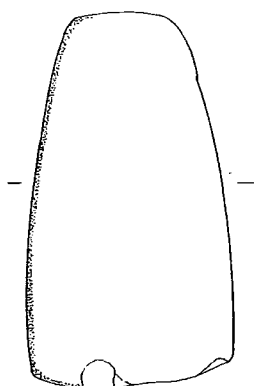
5



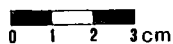
6



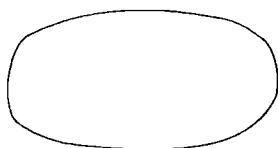
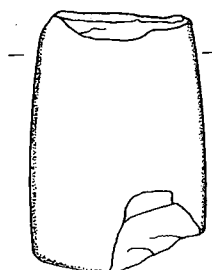
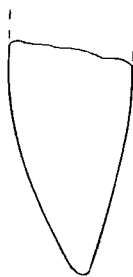
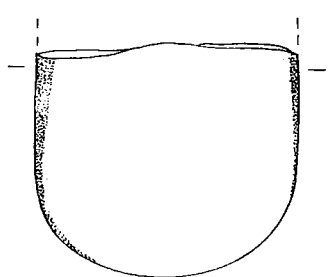
7



1



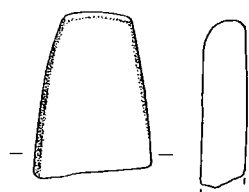
2



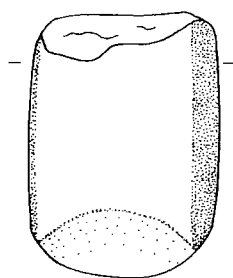
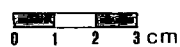
3



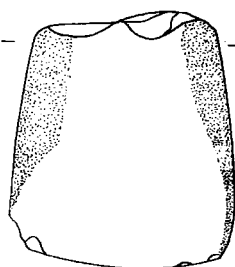
4



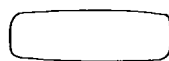
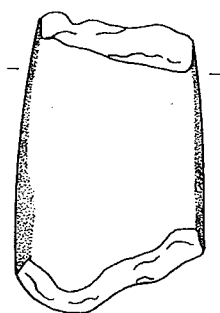
1



2



3



4

Fig.IV.36. Stone Axes from Yumurta Tepe (1-3), Karabaş (4), Kavakli 2 (5) and Köprübaşı (6-7).

Fig.IV.37. Stone Axes from Yağcili.

Fig.IV.38. Stone Axes from Yağcili (1-2), Köprübaşı (3) and Kavakli 1 (4).

cross-sectional types. A narrow oval, flattened sided cross-section is a characteristic feature of small axes in the Edirne Region. Large axes have an oval cross-section. Another typological parameter is the shape of the butt of axe. The most common butt shape is rounded. In the Edirne region, most of the axes have asymmetrical profiles and gently curved, symmetrical edges.

Although there are no petrological analyses of the axes in the Edirne region as yet, they were probably made from igneous rocks, such as basalt, amphibolites and andesite. The Istranca Mountains seem to be more promising for igneous rock sources. However, as yet there have been no systematic geological and archaeological investigations. One axe from Yağcılı seems to be made of the same rock as the Şarköy factories.

IV.C.8. Concluding remarks

The finding of prehistoric axe factories in Eastern Thrace has aroused much interest and so far is unique in the prehistoric record of the Balkans and Anatolia. There are, as yet, no systematic excavations of axe factories. Probably the most important question is how far these axes were distributed from the source. Petrological analysis of the stone axes from Eastern Thrace is still in progress. In the future, we shall be able to define the distributional range of axes from factories. However, early results show that, at the Early Neolithic settlement of Hoca Çeşme, stone axes were made of rock from the Şarköy sources.

All axe factories were found associated with prehistoric settlements. The prehistoric settlements are dated from the Early Neolithic to the Early Bronze Age. The stone axe factories or manufacturing areas spread over a very large area, covering the prehistoric settlements. We assume that the axe factories were probably dated also from the Early Neolithic to the Bronze Age. The settlement evidence from the axe factories indicates that full-time specialists may have been involved. Proof of full-time production can be estimated by the number of waste-products made by one person (Torrence 1986). Only systematic excavations in the factories will be able to answer this question.

IV.D. FIGURINES

IV.D.1. Introduction

According to the Penguin Dictionary of Archaeology: 'a figurine is a small model of a human or animal, the purpose of which seems usually to have been religious, to serve either as an object of worship itself, or as a votive offering to a god (Bray and Trump 1970: 87). A similar explanation was also given by Kipfer (2000: 188). It seems evident that

figurines were made and used for a purpose and that this purpose was constituted by the web of significance people were spinning into the figurines. The meaning of figurines is thus not something enshrined in them but something that people confer on them (Haaland and Haaland 1996).

An ethnographic study of figurines may help us to understand their functions and meanings. Various groups in Africa and the Americans regularly use figurines as teaching devices during initiation rites (Ucko 1968: 425; Talalay 1993: 40). Figurines are associated primarily with the teaching of sexual matters, marriage and the value systems of the culture. Among the Bantu people of Africa figurines are often used to illustrate narratives or proverbs extolling the virtues of hard work, courage, generosity, honesty, and the importance of the family unit (Cory 1956). Bantu figurines are usually stored in a corner of the initiation hut, during the lengthy ceremonies and are covered with a cloth when not in use. During the last days of the rites, each figurine is destroyed by being tossed into the nearest pool of water. More rarely the figurines are hidden in a cave until the next initiation rites are performed. Figurines are also an important part of initiation ceremonies among the Bemba people of North-eastern Rhodesia. Part of the puberty ritual for the female entails the use of small primarily anthropomorphic images (Richards 1956). All figurines remain the exclusive property of the mistress of ceremonies and are reused in subsequent rites. In some occasions, on the completion of the rite, a few figurines may be thrown into a river, or eventually are may be buried with the afterbirth of an initiate's first child. Since the figurines are used repeatedly, they tend to break and new images need to be made often (Talalay 1993).

Figurines often serve as vehicles for human fertility. Among the American Indians and some tribes from Africa and Asia, idols or small figurines are used to promote human fertility (Ucko 1968; Talalay 1993). In almost all cases where figurines are used to ensure female fertility, the figurines represent infants, not pregnant women. Parsons reported that in the early 20th century AD the Zuni American Indians enacted a series of complex rituals that included the use of zoomorphic images. Ceremonies took place during four days of the winter solstice. During that time, figurines were placed on altars or in shrine-holes under floors. At the close of the winter ceremonies, the Zuni either planted the figurines like seed or threw them out with the sweepings, thus consigning them to the rubbish heaps (Persons 1919: 285).

A number of cases is known in which figurines are placed in tombs. In these contexts, the figurines, which rarely appear to be deities, are buried for specific and often practical purposes (Ucko 1968: 426). Some groups in Africa bury spirit or fetish figures with their dead (Ucko 1968). Here, the function of buried figurines was to ward off the dangerous spirits of the deceased.

Figurines are also used as dolls (Ucko 1968; Talalay 1993). The Yami potters of Formosa, for example, model clay figurines for their own amusement during their pottery-making season and give them to children as dolls (Talalay 1993: 33). Further functions proposed include tokens of identification, ancestor images or as part of curing rites and witchcraft (Ucko 1968; Talalay 1993).

IV.D.2 Previous Researches in Prehistoric Figurines

Archaeologists who study prehistoric figurines fall into two schools of thought. The first group views figurines as ultimately religious or cultic, reflecting an underlying worship of one or several deities associated with various life-giving and regenerative forces (Talalay 1993). Although these kinds of explanations have amplified and modified earlier belief, in a great Goddess, they are unquestionably part of the long "Mother Goddess" tradition first embraced by archaeologists and anthropologists in the end of the 19th century. The early Neolithic and Chalcolithic figurines were found in Egypt by Sir Flinders Petrie in 1886 and in Crete by Sir Arthur Evans in 1900. Petrie considers these figurines as connected with the Mother Goddess. Evans, at first resistant to the description of figurines as 'idols', soon became a strong proponent of the Mother Goddess theory (Hamilton 1996). Most scholars came from the field of classical studies, where they were accustomed to goddesses, and tended to work backwards from the known to the unknown, often naming the deity represented by prehistoric figurines (Hamilton 1996).

The figurines especially came back into the archaeological spotlight because of the new wave of feminism, which started in the late 1960s (Conkey and Tringham 1995). The use by visionary feminists of archaeological data, in particular figurines, for their construction of a past different to that offered by the male-dominated establishment, is at the heart of the current debate on figurines (Hamilton 1996). Mother Goddess movements have employed largely archaeological data and interpretations of archaeologists such as Gimbutas (1982; 1989; 1991). Gimbutas argued that the abundance of female figurines in prehistoric contexts of Southeast Europe reflects an early belief in a Mother Goddess, a matriarchal social structure, and a time when women ruled either supreme or at least in partnership with man (Meskell 1995; Conkey and Tringham 1995). The prehistory of Europe was dominated by a harmonious, pre-patriarchal society characterized by a Mother Goddess-centred religion (Gimbutas 1989). Mother Goddess figurines may relate to the emergence of agriculture. Increased dependence on cultivation stimulates increased concern for the fertility of the crops (Haaland and Haaland 1996). There is a metaphorical link between women's fertility and crop fertility - mother and earth. The wealth of anthropomorphic figurines testifies to a complex pantheon centred on the Mother Goddess of life, death and regeneration and the deity's various epiphanies, which include, among

others, a snake, bird, frog Goddess as well as a male enthroned god (Gimbutas 1982; 1989). The same idea was used by Mellaart for Çatal Höyük figurines (Mellaart 1975).

The second group of archaeologists adopts a broader perspective. Without categorically denying that these small, portable images may have served religious or cultic purposes, either implicitly or explicitly they believe that figures were ultimately associated with the adaptive strategies of a given community and that their functions varied (Talalay 1993). At the end of the 1950s, Braidwood, who found figurines in rubbish at Jarmo, suggested that they were vehicles for wishes and desires (Hamilton 1996). Ucko was the first archaeologist to discuss the value of ethnographic analogues in the study of prehistoric figurines and to attack Mother Goddess theories (1968). He proposed that prehistoric images were not only multifunctional but may have served purposes comparable to those of similar objects observed in modern ethnographic societies studied by anthropologists. On the basis of ethnographic analogues, Ucko suggested that the Neolithic figurines possibly were used in curing rites, initiation ceremonies, marriage rituals and oral narratives (Ucko 1968: 425-426). Ucko also argued that the creation of an overwhelming majority of figurines made of clay supported the conclusion that they may not be deities. Most of the figurines were not found in religious contexts but in domestic areas. He also suggested that the homogeneity of the Mother Goddess interpretation, over time and space, does not match the variation of figurine form across the same dimensions (Ucko 1968). Meskell correctly argues that the figurines in Greek Neolithic sites are found in every context, suggesting that, for Gimbutas, all contexts were therefore sacred but, for others, that the meaning of figurines changed through the course of their "lives" (Meskell 1995: 82). Talalay has suggested the use of figurines as identification tokens or contractual devices (Talalay 1987; 1994). She proposed that clay legs from the Northern Peloponnese served to symbolize social and economic bonds among communities like those of marriage contracts or identification of trading partners (Talalay 1987: 161). Goring has used use-wear analysis in her interpretation of a group of Chalcolithic Cypriot figurines as birth aids and educational tools (1991). In the terms of gender status, Chapman has identified a correlation between the proportion of deities and the productive contribution of women within society. A high percentage of female deities often reflects a high ratio of female contribution to subsistence (Chapman 1991: 157). For example, if the Balkan Neolithic figurines represented Goddesses, this could follow from a high female contribution to digging-stick and hoe agriculture, rather than secular dominance. Criticizing the psychoanalytic aspects of Goddess theory, Bailey has interpreted Chalcolithic Bulgarian figurines as individuals (Bailey 1994; 1996; 2000). According to Bailey, there is no archaeological evidence to support claims for a ritual function of the anthropomorphic figurines from Bulgaria (Bailey 1994). Bailey argued that 'the first important consequence of reading figurines, together with burials, as indicators of individual identities is the

documentation of a sexual distinction of domestic and burial space during the Chalcolithic in North-East Bulgaria. The second important consequence is that the structure of Chalcolithic society was not limited to simple male-female division but included individuals who were identified either as male or female. Thus the sexual characterization of space includes not only a clear male-female opposition, which was tied to burial and domestic space, but also a sexual element which transcended the sexual barriers demarking mortuary and domestic space" (Bailey 1994: 329; 2000).

IV.D.3. The Figurines Found During The Survey in The Edirne Region

Although large quantities of figurines were discovered at Aşağı Pinar and Hoca Çesme excavations, there are so far no detailed publications. All the figurines, which are presented here, come from the Edirne region. There are 10 fragmentary figurines found during our survey in the Edirne region - 2 torsos, 5 heads, 1 arm and 2 lower parts of the torsos or leg fragments. Complete examples are absent. All figurines are made of clay. Half of the figurines were found in Yağcili. Yağcili is dated to the Late Neolithic (Karanovo III-IV) period. An example from Avariz / Kumocağı was also found in the Late Neolithic (Kalojanovec / Çardakalti) strata where it was exposed by a large trench dug for the quarrying of sand. Other figurines were found in Chalcolithic settlements.

Facial features are fairly perfunctory. The beaded head is dominant especially in the Late Neolithic. A triangular shaped head with slanted excised eyes was found at the Chalcolithic settlement of Tepeyani. They are probably standing figurines.

Determining sex in prehistoric figurines is not always a simple matter. Sex was determined as female when the lower or upper parts of body survived and had no male genitalia, but did have breasts. Among the figurines of the Edirne region, with the exception of one female example, sex is not determinable. One example, Yağcili B may have been deliberately designed as sexless.

Only three pieces of the Edirne region figurines have incised or excised decoration. Interpreting decoration on figurines is problematic. The designs may have been intended to portray clothing, tattooing, scarification or simple aesthetic patterns with no representational meaning. On the basis of Neolithic Greek figurines, Talalay argues that the designs on the figurines make little sense as clothing or jewellery, but they may indicate some kind of body design (Talalay 1993: 71). Some ethnographic studies show that body design is based on taboos, rituals and beliefs within the society.

IV.D.3.1. Catalogue

This catalogue offers detailed information on each piece that was found during our survey in the Edirne Region (Plate XVII: bottom and Plate XVIII). For each figurine the following information is provided: 1. Brief description. This includes the shape of the figurine and the part(s) of the body depicted. 2. Present condition. 3. Fabric. 4. Colour. 5. Decoration. 6. Measurements. 7. Sex.

1. Tepeyani A: Triangular head with slanted excised eyes, pointed / beaked nose. Two perforated holes on both side of head. Broken off below nose. Fine fabric. Light brown in colour, burnished. 2.5 cm wide 1.2 cm high. Sex is unknown (Fig.IV.41:2).

2. Tepeyani B: Cylindrical head / neck with beak-like projection for nose. Broken at neck. Medium fine fabric. Light brown in colour. 1.5 cm wide, 4.5 cm high. Sex is unknown (Fig.IV.40:4).

3. Kocatepe: Arm fragment. Right arm broken off above shoulder. Hand probably joined to body. Decorated with horizontal placed, semi-circular excised lines. Coarse fabric. Dark brown in colour. 1.6 cm wide, 7.5 cm high. Sex is unknown (Fig.IV.41:3).

4. Yağcili A: Torso with small, pellet breasts. Flat back. Broken at neck, bottom and arms. Medium fine fabric. Greyish brown in colour. 4.5 cm wide, 4.0 m high. Female (Fig.IV.40:3).

5. Yağcili B: Torso with stumpy arms. Arms are perforated with holes. Flat back and front. Broken at neck and heap. Surface is partly worn all over. Body is decorated by incised lines. Semi-circular lines at neck and concentric W's at all over the body. Dark brown in colour. 6.2 cm wide, 6.0 cm high. Sex is unknown (Fig.IV.40:1).

6. Yağcili C: Beaked head. Broken at neck. Top and back of the head was decorated by deep excised lines. Medium fine fabric. Greyish brown in colour. 2.1 cm wide , 2.8 cm high. Sex is unknown (Fig.IV.41:4).

7. Yağcili D: Beaked and rounded top head. The eyes are perforated with holes. Broken at neck. Nose is also partly broken. Fine fabric. Grey in colour. 2.5 cm wide, 6.1 cm high. Sex is unknown (Fig.IV.40:2).

8. Yağcılı E: A round head with excised round eyes. Pinched up nose. Broken at neck. Medium fine fabric. Greyish brown in colour. 2.6 cm wide, 3.7 cm high. Sex is unknown (Fig.IV:41:1).

9. Arpaç / Kaynaklar: Leg fragment of a standing figurine. Probably part of a vessel. Fingers are shown by incised lines. Medium fine fabric. Dark brown in colour. 3.2 cm wide, 5.3 cm high. Sex is unknown (Fig.IV.41:6).

10. Kumocağı / Avariz: Rectangular lower torso of standing figurine. Flat back and front. Surfaces were roughened by scraping. Coarse fabric. Dark brown in colour. 4.1 cm wide, 6.6 cm high. Sex is unknown (Fig.IV.41:5).

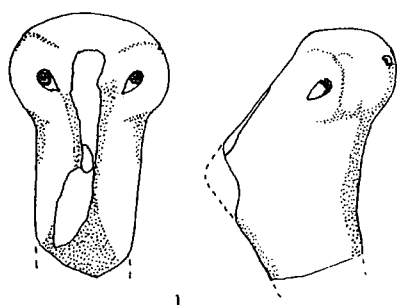
A small cult table was found in the Chalcolithic settlement of Kocatepe. It is a fragmentary piece with an eye motif (Fig.IV.40:5).

IV.D.3.2. Typological Analogies

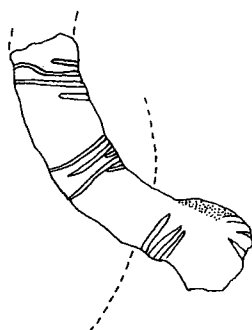
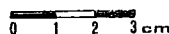
Southeast Europe has yielded an extremely rich collection of figurines. All the figurines found in the Edirne region come from the Late Neolithic and Chalcolithic settlements. Direct analogies for the Edirne figurines can be found on the Balkan sites. The Late Neolithic beaked head figurines from the Edirne region are the most widely distributed. This shape had a long tradition in the Neolithic and Chalcolithic periods in the Balkans (e.g. Gimbutas 1991; Todorova and Vajsov 1993; Comşa 1995). Shapes almost identical with the beaked head figurines of the Edirne region are known from Late Neolithic settlements in Bulgaria (Todorova and Vajsov 1993: Fig. 192), and Vinča sites in Macedonia, such as Anza IV (Gimbutas 1976: Fig. 162-169).

A hand fragment found in Kocatepe belongs to a type figurine with hands clasped across the stomach. The figurines and anthropomorphic vases with two hands on the belly are widely distributed in the Balkans. The best example from the Chalcolithic period and closest to that of Kocatepe is the "lady of Vidra" (Gimbutas 1982: Fig. 105), a seated figurine at Ovcarovo (Todorova 1974: Fig. 11), the "lady of Pazardzik" (Gimbutas 1982: Fig. 207), and the "masked lady of Bariljevo" (Gimbutas 1982: Fig. 17).

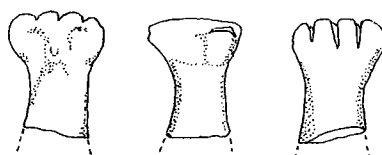
A triangular head figurine with slanted excised eyes and pointed nose was found in the Chalcolithic settlement of Tepeyani. Such figurines seem to occur in the Vinča culture (cf. Šljivik and Vitkovačko Polje : Srejić 1988: 098 and 105). The examples from the Chalcolithic period, which are probably closest to our example, come from sites such as Vidra (Müller-Karpe 1968: Tafel. 176) and Sitagroi III (Renfrew et al. 1986: Fig. 9.134). Figurines found at the Chalcolithic settlement of Dervishov odzhak in Southeast Bulgaria



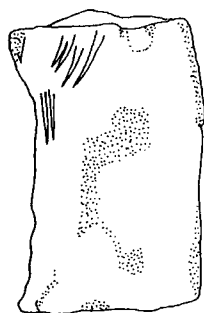
2



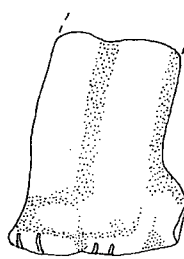
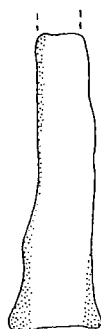
3



4

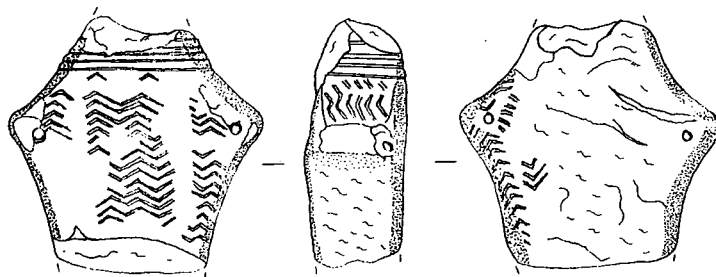


5

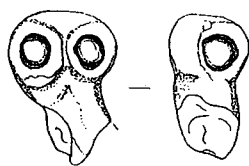


6

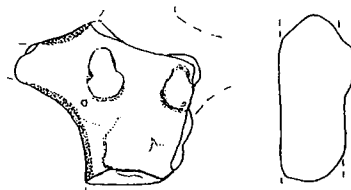




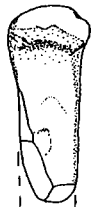
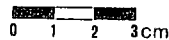
1



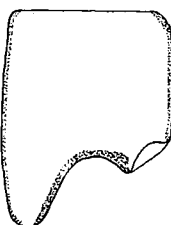
2



3



4



5

Fig.IV.40. Figurines from Yağcılı (1-3) and Tepeyani (4). A cult table from Kocatepe (5).

Fig.IV.41. Figurines from Yağcılı (1,4), Tepeyani (2), Avariz / Kumocağı (5), Kocatepe (3) and Arpaç (6).

and Tatarkoi in North Bulgaria may represent the same tradition as our figurine (Leshtakov 1997: Fig.38:1 ; Radunčeva 1974: Fig. 8:b).

A cylindrical head / neck figurine from the site of Tepeyani recalls rod-head figurines from Southeast Europe (Nandris 1970: 208-210). This shape had a long tradition in the Early and Middle Neolithic in the Balkans (Todorova and Vajsov 1993). Tepeyani is dated to the Chalcolithic period. However, only a handful of Middle Neolithic (Karanovo III) sherds were found.

A comparable example to the Yağcili torso with stumpy arms, decorated with concentric W's comes from the Karanovo IV period sites of Nova Zagora (Kanceva 1992: Taf.II:2). For the small cult table of Kocatepe, similar examples can be found at Gumelnița settlements in the Balkans (Comşa 1995: Fig.116).

IV.D.4. Concluding Remarks

A study of a handful of figurines from the Edirne region is outlined above. As ethnographic analogies suggest, figurines possibly were used in curing rites, initiation ceremonies, marriage rituals, fetishes, deities and ancestor images etc. (Talalay 1993). Whittle suggested that the large number of figurines from later Neolithic levels of the Balkans at sites such as Vinča, Karanovo and Târpesti represent deities associated with the growing role of ritual activity and control in the area (Whittle 1985: 150-156). Chapman, who investigated the figurines from the Balkans, suggested that only ca.10 per cent of the items have been deposited as complete (Chapman 2000a). He explicitly links the method of manufacture to subsequent breakage. Figurines were made from one, two or three lumps of clay and the manufacturing process was closely connected to subsequent fragmentation (Chapman 2000a). According to Chapman, the Balkan figurines may depict mythical personages or ancestors (Chapman 1991). The living and the ancestors become related to each other through material means - the tokens of significance that become figurine fragments. The use of these tokens did not necessarily endure as long as the relationship itself, which could then have been extended and solidified by means of further fragmentation of tokens (Chapman 2000a: 75). The figurines found in the Edirne region are also fragmentary, consisting of heads, torsos and an arm. Talalay argued that most of the split-leg figurines from Peloponnese were originally attached to complementary and matching halves (1987). They were deliberately designed so that the attached halves could be easily separated and realigned. She also argues that ethnographical analogues reveal objects designed for intentional splitting that frequently served either as contractual devices or as identifying tokens between individuals or groups. In all cases, the objects symbolized an agreement, obligation, friendship, or common bond (Talalay 1993: 46). Talalay who worked on the Franchthi cave and the Paralia figurines argued that none of the

figurines could be associated with ideas of an afterlife or with cult practices involving the worship of specific deities (Talalay 1993: 84). Bailey also thought that there is no evidence for a ritual function of the figurines from Bulgaria (Bailey 1994). He argued that the Chalcolithic figurines of Southeast Europe represent the human form and are about human identity. They negotiate, manipulate, dictate and determine the connection between the self, the other and the world (Bailey 1996: 293). There are only a handful of figurines were found in the Edirne region. Thus, only the general aspects of function may be determined. The Edirne region figurines may depict mythical personage or ancestors, as Chapman argued for the Balkan figurines. On the other hand, some fragmentary pieces (cf. an arm fragment from Kocatepe) may serve to symbolize social and economic bonds among communities like those of marriage contracts or identification of trading partners.

The figurines from the Edirne region were found in the Late Neolithic and Chalcolithic settlements and one can find analogies in numerous sites of the Balkans. On the other hand, the Edirne region figurine-makers maintained a degree of individualism in form and design of their images.

CHAPTER V: THE NEOLITHIC AND CHALCOLITHIC CULTURES IN TURKISH THRACE AND THEIR EXTERNAL RELATIONS

V.A. INTRODUCTION

The concept of the "archaeological culture" has been discussed by different archaeologists over a long period of time (e.g. Childe 1957; Binford and Binford 1968; Clarke 1968; Klejn 1982; Daniel and Renfrew 1988; Hodder 1982b; 1982c and Chapman and Dolukhanov 1993). The Childean concept of cultures concerns regularly associated artefact assemblages found within a limited geographical area (Childe 1929). According to Childe, the people producing a culture were only definable by the material culture itself (Childe 1957). The culture was a purely archaeological entity. D. Clarke echoes this definition and, like Childe, he saw material culture as representing coded survival information passed from generation to generation. According to Clarke, an archaeological culture is a polythetic set of specific and comprehensive artefact types which consistently recur together in assemblages within a limited geographic area (Clarke 1968). L. Binford (1968) claimed that there was a direct linkage between cultural systems and material culture, because of the interaction between normative ideas, behaviour and material remains. For Binford, culture was the extra-somatic means of adaptation for the human organism - a non-genetic response to local environmental change (Binford 1972). C. Renfrew took up this theme in his characterisation of culture as an essentially homeostatic device to ensure both minimum changes in the system and adaptations to fluctuations in the external environment (Renfrew 1972). A post-processual view was given by Hodder, according to which, each culture is a particular historical product, to be understood as a meaningful framework for cultural action rather than as an adaptation to the physical and social environment (Hodder 1982c). Material culture comprises 'a structured set of differences, the product of human categorisation processes in dialectical relationship to human action' (Hodder 1982c). Since artefacts are immediately cultural and not social, they can inform on society only through an adequate understanding of the cultural context (Hodder 1982c).

The meaning of the term "culture" which I am going to use in this chapter is similar to that of Clarke and Hodder, viz. a collection of archaeologically observable data; it is defined as a regularly occurring assemblage of associated artefacts, which is used in an active manner to display in symbolic form, feelings of allegiance and defence etc, and can be regarded in this sense as indicative of the cultural identity of a particular social group.

V.B. THE NEOLITHIC AND CHALCOLITHIC CULTURES OF TURKISH THRACE.

The discussion below consists of a regional synthesis based on excavation and surface survey results of Turkish Thrace. Discussion falls into two phases; definition of cultures of Turkish Thrace in each period and their relations with the Balkans and Anatolia.

V.B.1 Neolithic

The Early Neolithic: In North-Western Anatolia, the Early Neolithic period was investigated better than other periods. In Turkish Thrace, the Early Neolithic material has been recorded in the settlements of Hoca Çeşme, Yarımburgaz Cave, Aşağı Pinar, Hamaylitarla (Buruneren) and Kaynarca (Harmankaya et al. 1997). A few Early Neolithic sherds were also found at Karaağaçtepe, Bulgar Kaynağı, Altıağaç and Maya Baba (Fig.III.1). Only three sites - Yarımburgaz Cave, Hoca Çeşme and Aşağı Pinar - have been excavated.

Yarımburgaz Cave is located ca. 20 km west of Istanbul, on the Northern end of the Küçük Çekmece lagoon. The 1986 rescue excavation revealed a sequence of four cultural assemblages with pottery (Özdoğan et al. 1991). Yarımburgaz levels 5 and 4 were dated to the Fikirtepe Culture (Özdoğan 1997). In the Marmara Region, the Fikirtepe Culture is the earliest Neolithic Culture in the regional sequence. Both Fikirtepe and Pendik were found in 1908 during the construction of the Istanbul-Baghdad railway. The site of Fikirtepe was excavated by K. Bittel and H. Çambel between 1952 and 1954 (Bittel 1969/70), and from that time similar finds have commonly been referred to as the "Fikirtepe Culture". In the 1960s, S.A. Kansu made a small sounding at Pendik and Tuzla in Istanbul, finding the Fikirtepe material (Kansu 1963; 1972). Excavations in the 1980s at Demirci Höyük in the Eskişehir region (Seeher 1987), Pendik (Özdoğan 1983c; Harmankaya 1983; Pasinli et.al.1994) and Yarımburgaz cave (Özdoğan et al 1991) in the Istanbul region, surface surveys of J. Mellaart (1955), D. French (1967) and M. Özdoğan (1986b) in the Iznik-Yenişehir area, M. Özdoğan's surveys in the Marmara region (Özdoğan 1997) and T. Efe's surveys in the Eskişehir-Kütahya region (Efe 1989-90; 1994; 1996) revealing more material from the Fikirtepe culture. However, the most informative excavation about this culture was Ilipinar, near the Iznik Lake (Roodenberg 1995). The recent excavation at Menteşe in the Yenişehir region has also added new information to our knowledge about the Fikirtepe culture (Roodenberg 1999a). According to Özdoğan and Efe, three evolutionary phases were distinguished on the basis of pottery (Özdoğan 1997: 19; 1999b: 213; Efe 1996: 51).

The earliest phase of the Fikirtepe culture, called the Pendik phase or Archaic phase, is known from the lower layers of the Fikirtepe and Pendik excavations (Özdoğan 1997: 21). Pottery from this phase comprises grit- and sand-tempered, brown-grey, dark grey and sometimes pale orange, reddish brown burnished wares. The most common shapes are bowls and jars with either simple convex sided or with a slight "S" curve. Hole-mouth vessels, exaggerated large lugs and vertically perforated knobs are also common. Decoration is rare, mainly consists of incised lines. The most common motifs are parallel lines, triangles, squares and hatching. Spoons or spatulas, awls and fish hooks are characteristic bone implements.

The second phase is the Classic Fikirtepe Phase. It is best represented at Pendik and the Upper horizon of Fikirtepe. According to Özdoğan, the transition between the first and the second phases is difficult to define (Özdoğan 1997: 21). There is a gradual development in the pottery. The most common form is a bowl with "S" curved profiles and oval mouth. Besides the heavy lugs, there are also tubular lugs. Four-footed rectangular vessels or boxes are very characteristic. There are also lids. The decoration is the same as in the previous phase, but the designs are more complex. During the Classic Fikirtepe phase, red slipped, burnished wares began to appear. According to Özdoğan, Ilipinar level X represents the transition between the first and the second phases. Classic Fikirtepe pottery was found in the Kütahya-Eskişehir Region, Inner Western Anatolia, at sites such as Findik Kayabaşı and Keskaya (Efe 1995; Özdoğan 1997:21).

The last phase of the Fikirtepe culture is called Developed Fikirtepe or Yarimburgaz 4 phase. This phase is characterized by its elaborate decoration made by wedge-like excisions, often set directly behind one other or else set in zigzags. The designs are more complex, which Özdoğan called textile-like designs (Özdoğan et al 1991). Dark faced wares are common. The surfaces of vessels are mostly burnished and occasionally a dark slip is applied. The red slipped and burnished wares rarely occur. The most characteristic shapes are short or tall-necked jars with a squat globular body. Developed Fikirtepe types of sherds were also noted in Ilipinar level VIII. The pottery tradition of Ilipinar VIII deviates from the preceding layers (Thissen 1989-90; Roodenberg 1995). The sites of Demirci Höyük (Seeher 1987) Orman Fidanlığı and Kanlıtaş (Efe 1989/90; 1996) in the Eskişehir region include typical Developed Fikirtepe sherds.

Recently, L. Thissen proposed that differences in the main vessel shapes between sites on the Eastern Marmara coast and Ilipinar X may be related to differences in the subsistence base rather than indicate chronological variety (Thissen 1999: 32). According to him, different cooking vessels of Ilipinar X may have been used for the preparation of different foodstuffs. This means there could be considerable chronological variation within the Fikirtepe culture.

Comparisons between the Iznik-Yenişehir region and the Eastern Marmara coasts show that the buildings of Fikirtepe and Pendik are oval huts with depressed floors and wattle-and daub walls. However, the buildings of Ilipinar and Menteşe are rectangular, constructed in wattle-and-daub. The subsistence of Ilipinar was mostly dependent on domesticates, while Fikirtepe and Pendik were based on mixed hunting, fishing and a stock breeding economy with some agriculture (Roodenberg 1995: 167-168; Özdoğan 1989: 203). The chipped stone industries of both Fikirtepe and Pendik are both similar to the preceding Epi-palaeolithic tradition. 95% of the chipped stone industry is of flint and the rest is of obsidian⁸. Although Özdoğan argued that the chipped stone industry of Ilipinar is different from those of Fikirtepe and Pendik, recent work shows that Ilipinar represents a continuation of a local Epi-palaeolithic tradition analogous to Fikirtepe and Pendik (Thissen 1999: 37). Moreover, the chipped stone industries from Fikirtepe-type settlements in the Eskişehir region, such as Findik Kayabaşı are also similar to the Epi-palaeolithic tradition (Efe 1995:108).

The C14 dates from Yarimburgaz Cave level 4 (Özdoğan 1997: 22), Menteşe (Thissen 1999) and Ilipinar (Roodenberg et al 1989-90; Roodenberg 1995) are seen in Table V.1. The Fikirtepe culture was dated to ca. 6200-5700 cal. BC (Fig.V.1). However, new dates from the early Menteşe gave ca. 6300-6400 cal. BC ⁹ (Alpaslan-Roodenberg 2001). Thus, we can accept ca. 6400 cal. BC for the early Fikirtepe culture.

It is proposed that the origins of the Fikirtepe culture are located in Central Anatolia (Özdoğan 1989: 203; 1997: 22; 1999b; Thissen 1989-90: 95,96; 1999: 37). According to Özdoğan, the roots of Fikirtepe pottery lie in the Hacilar and Çatal Höyük assemblages, whence it comes fully developed from the South as an intrusive new package (Özdoğan 1989: 203). He concluded that the Fikirtepe Culture might be contemporary with the uppermost layers of Çatal Höyük and Hacilar IX-VI. According to Roodenberg, there are some similarities and differences between the Fikirtepe pottery and the pottery tradition of the Lake District. He suggested that Fikirtepe pottery carries some elements from the Lake District in Central-West Anatolia (Roodenberg 1995). Recent excavations in the Lake District region such as Höyücek and Bademağacı, yielded dark burnished monochrome wares earlier than Hacilar IX-VI and similar to Fikirtepe and late Çatal Höyük (Duru 1999). Thissen's investigations of Çatal Höyük and Ilipinar pottery indicated that the link

⁸ A number of obsidian artifacts from Ilipinar X and IX, Fikirtepe and Pendik were investigated, using Instrumental Neutron Activation Analysis and Fission Track dating (Bigazzi et al. 1995). The results suggest that the analysed artefacts came from natural sources located in Central Anatolia (the Çiftlik obsidian group) and Northern Anatolia (the Sakaeli obsidian group). However, sources of most of the artefacts from Fikirtepe and Pendik are unknown. According to Özdoğan, there are many more small but significant obsidian sources in Western and North-Western Anatolia (Özdoğan 1996b), but no geological evidence is available for this statement.

⁹ C14 dates of Menteşe will appear soon in a book called the Ilipinar Excavations II (Roodenberg & Thissen, in press).

between Central and North-West Anatolia was established some where during Çatal Höyük VIA-III phases (Thissen 1999:37).

Table V.1. Radiocarbon Dates of the Fikirtepe Culture.

| Lab. Number | Level | ¹⁴ C Age BP | Cal. BC (1 Sigma) |
|-------------|---------------|------------------------|---------------------------------|
| Gm-15529 | Yarimburgaz 4 | 7330±60 | 6231 (6216,6167,6164) 6084 |
| Gm-18745 | Yarimburgaz 4 | 6650±280 | 5797 (5615,5585,5561) 5322 |
| Gm-24463 | Mentese | 7260±60 | 6213(6158,6143,6082) 6028 |
| Gm-24461 | Mentese | 7170±60 | 6156 (6018) 5931 |
| Gm-24462 | Mentese | 7050±35 | 5986 (5975,5950,5916) 5844 |
| Gm-17046 | Ilipinar X | 7100±30 | 6006 (5988,5940,5929) 5920 |
| Gm-15085 | Ilipinar X | 7100±50 | 6012 (5988,5940,5929) 5960 |
| Gm-15087 | Ilipinar X | 7070±50 | 5992 (5981,5946,5921) 5844 |
| Gm-17045 | Ilipinar X | 7025±30 | 5979 (5890) 5841 |
| Gm-17048 | Ilipinar X | 7025±90 | 5992 (5890) 5794 |
| Gm-17047 | Ilipinar X | 6925±70 | 5890 (5792)5724 |
| Gm-15084 | Ilipinar X | 6440±50 | 5475 (5466,5444,5401,5382) 5325 |
| Gm-15077 | Ilipinar IX | 7020±50 | 5982 (5889,5846,5845) 5810 |
| Gm-16144 | Ilipinar IX | 6935±35 | 5840 (5835,5834,5799) 5735 |
| Gm-15078 | Ilipinar IX | 6920±70 | 5867 (5787) 5722 |
| Gm-16145 | Ilipinar IX | 6800±90 | 5736 (5711,5678,5672) 5624 |
| Gm-16146 | Ilipinar IX | 5330±80 | 4320 (4221,4163,4118,4055) 4003 |
| Gm-17052 | Ilipinar VIII | 6995±45 | 5973 (5869,5861,5842) 5805 |
| Gm-17054 | Ilipinar VIII | 6990±30 | 5890 (5866,5864,5841) 5807 |
| Gm-17055 | Ilipinar VIII | 6980±45 | 5957 (5840,5816,5815) 5795 |
| Gm-17051 | Ilipinar VIII | 6960±45 | 5879 (5838, 5822,5809) 5749 |
| Gm-17056 | Ilipinar VIII | 6950±45 | 5870 (5837,5826,5806) 5742 |
| Gm-16149 | Ilipinar VIII | 6890±90 | 5841 (5734) 5671 |
| Gm-17053 | Ilipinar VIII | 6750±65 | 5718 (5658,5651,5640) 5565 |

Ref: University of Washington Calibrated Program 2000

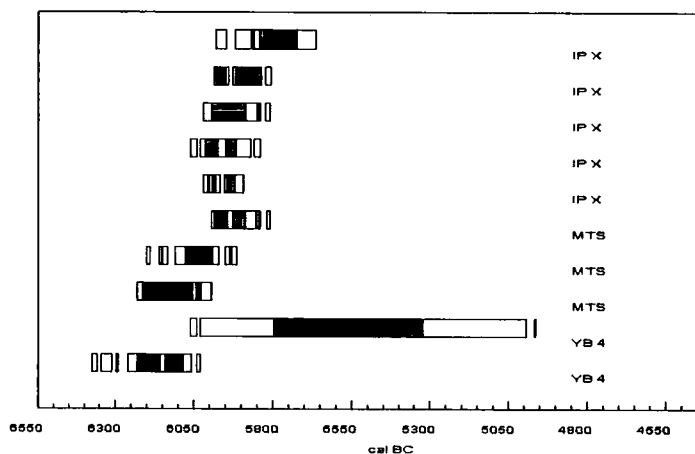
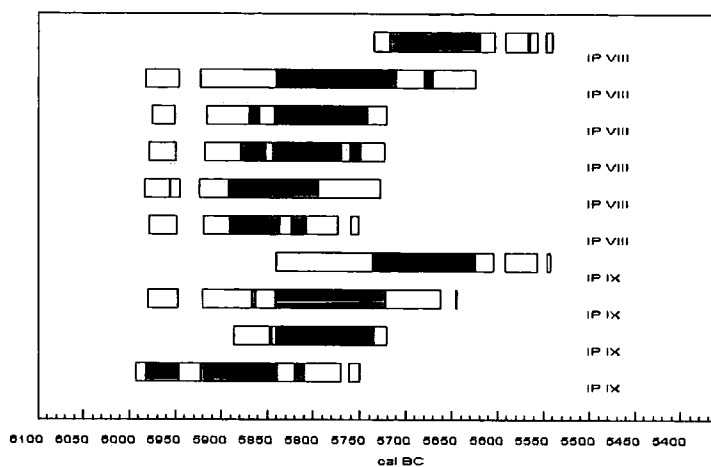


Fig.V.1. Calibrated dates of the Fikirtepe Culture.

The pottery of Yarımburgaz Cave level 5 is represented by a few sherds and is said to have evident traits of the Fikirtepe culture (Özdoğan 1989: 204). Level 4 at Yarımburgaz belongs to the developed phase of the Fikirtepe Culture. Dark burnished pottery is characterized by its elaborate decoration made by wedge-like excisions, often set directly behind one other or else set in zigzags. The designs are more complex, reminiscent of textiles (Özdoğan et al. 1991). Similar decorated sherds were found at Fikirtepe sites such as Taraççi, near Gönen in the Balıkesir region (Özdoğan 1990), Ilipinar phase VIII (Roodenberg 1995), Demirci Höyük (Seeher 1987), Orman Fidanlığı and Kanlıtaş in the Eskişehir region (Efe 1989/90; 1996; 2001).

According to Özdoğan, Archaic Fikirtepe sherds were found at Bulgar Kaynağı and Aşağı Pinar in the upper Ergene Basin (Özdoğan 1999b: 214). Only 3 sherds were found at Aşağı Pinar, seemingly intrusive in the fill of layer 6, and only 5 sherds were published at Bulgar Kaynağı (Özdoğan 1999b: Fig.43,a-e). Bulgar Kaynağı has been completely destroyed, and it is impossible to re-investigate the site. Özdoğan also argued that Bulgarian “monochrome” pottery is strongly reminiscent of Archaic Fikirtepe Pottery (Özdoğan 1997; 1999b). The “monochrome phase” is the earliest pottery horizon in Greece (Holmberg 1964a; Theocharis 1973: 35; Nandris 1970: 199). Monochrome pottery is found throughout mainland and insular Greece, from the plain of Thessaly, bounded to the North by Olympos, as far as the Gulf of Argos and from the Northernmost Island of the Ionian Sea as far as Skyros in the heart of the Aegean. The “monochrome phase” was characterised by monochrome grey-brown to black coloured pottery. The most common shapes are simple bowls or closed pots with rounded base or a low standing. In Macedonia, the excavations at Nea Nikomedeia and Anzabegovo showed that there is no monochrome phase exist earlier than painted pottery horizon (Nandris 1970: 199; Theocharis 1973, Whittle 1985: 41). Koprivets, Pomoshtitsa and Poljanitsa-Plateau in North-Eastern Bulgaria and Krainitsi in Western Bulgaria have revealed monochrome pottery said to be earlier than the Karanovo I painted pottery horizon (Todorova and Vajsov 1993). In Poljanitsa-Plateau, rectangular houses ca. 3,5 x 3,5 m and 4 x 4 m in size were found. The pottery is characterized by coarse ware, thick-walled and red slipped. Straight-sided, high-footed dishes, “S” shaped bowls and jars with vertically pierced knobs are the forms. Four C14 dates are available at Poljanitsa-plateau: 7535±80 BP., 7140±80 BP., 7380±60 BP. and 7275±60 BP. (Görsdorf and Bajadziev 1996: 122) producing dates ca. 6400-6200 cal. BC, earlier than the Karanovo I horizon (Todorova and Vajsov 1993:90). Although these dates from Poljanitsa-plateau are criticised by some archaeologists (personal communication, J. Chapman), they match the dates for early Fikirtepe and Hoca Çeşme. In Koprivets and Pomoshtitsa, no traces of architecture were found. Only some hearths were found at Koprivets (Stefanova 1996). This pottery is characterized by two distinct ware types - fine and semi-coarse or coarse. All the pottery has organic temper. In Koprivets,

surface colours are beige, grey-beige, grey-brown, dark red and reddish brown. No beige and grey coloured sherds were found at Pomoshtitsa. Most of the pottery has dark red, reddish brown and dark brown in colours. Some pottery has a slip. They are smoothed and sometimes burnished. The common shapes are "S" shaped, rounded and carinated bowls, dishes and necked jars. Nail, finger impressions and applied bands occur (Stefanova 1996). In Krinitza, fine and semi-coarse or coarse wares of Northeast Bulgarian sites occur (Stefanova 1996). Surface colours are beige, grey-beige, light brown, dark brown, and rarely light red and dark grey. Surfaces of the vessels were smoothed and sometimes burnished. The common forms are "S" shaped bowls, rounded bowls, dishes and necked jars (Stefanova 1996). Özdoğan also argues that some sherds from basal layers of some early Bulgarian sites, such as Kazanluk, Slatina and Gâlâbnik are strongly reminiscent of the Pendik phase of the Fikirtepe culture (Özdoğan 1998b: 22). However, he has not attempted to explain how many sherds are similar and what kind of pottery similarities exist between early Bulgarian sites and Fikirtepe.

I would argue that there is not enough evidence to prove the existence of the Fikirtepe culture in the inner part of Turkish Thrace as well as in Western Thrace.

Excavations at Hoca Çeşme-Enez, conducted by M. Özdoğan between 1990 and 1992, suggest the existence of a different Early Neolithic culture in Turkish Thrace, called the "Hoca Çeşme Culture" by Özdoğan (Özdoğan 1997). Hoca Çeşme is a small mound on a natural rise overlooking the delta of the Meriç River, ca. 5 km. East of the district centre of Enez. The site was first discovered by S. Başaran in 1990. It measures about 80x70 m. and the archaeological deposit is about 2 m. thick (Özdoğan 1993a: 182; 1998b; 1999b: 217-219). Four phases were discovered in Hoca Çeşme. Phase IV is the earliest phase. The architectural remains of this phase were built immediately on the bedrock. Houses are oval wattle-and-daub hut-like structures, cut into bedrock ca. 30 cm deep. Their diameter varies from 5 to 6 m. The settlement was surrounded by a massive stone fortification wall ca. 1 m thick. Post-holes found just behind the wall indicates that the fortification wall was supported by a wooden structure. The pottery of this phase is characterized by well-burnished, thin walled red or black wares. Deep bowls with "S" curves, vertically-placed tubular lugs, crescentic lugs, bead rims and flat bases are common elements of this phase. There are also a few zoomorphic vessels. Decoration is rare, mainly consisting of fine curvilinear or vertical bands in relief. There are also some grooved and incised sherds. The subsistence economy depends mainly on farming with some hunting and mollusc collecting. Grinding stones, axes, some rounded stone bowls and figurines were also recovered.

Hoca Çeşme phase III consists of two architectural layers. Houses are again oval in plan and the fortification wall still exists, with some renovations. On the North-Western edge of the settlement, one house is different from the others. It is a big oval hut of 7 m

diameter and its floor was paved by small pebbles then coated and painted in red. The pottery of phase III shows a gradual development in fabric and decoration. All ware types of Phase IV continue, though they are slightly coarser and thicker. Red coating on black burnished ware appears. There are also red-black, light cream-red-black mottled sherds. Vessel shapes are similar to the previous phase. However, the profiles are now more carinated and necked jars are slightly increasing.

Phase II consists of three architectural layers. This phase is marked by a change in the plan and the construction techniques of the buildings. The houses are rectangular in plan with plastered walls. There are domed ovens on raised platforms, round or rectangular bins and working platforms were found inside the houses. The fortification wall was still in use. The red and black wares of the previous phases were now noted in lesser amounts. In phase II, there is an increasing amount of reddish-brown and matt black sherds. The sherds are notably thicker. Some new shapes are attested, such as footed rectangular or triangular vessels with excised or incised decoration and tall-necked jars sometimes with small handles. Decorations of the preceding phases continue. Fluting and intentional mottling also occur. There are also some red on cream, red on black, white on black and white on red painted sherds. According to Özdoğan, houses and pottery, especially white on red sherds of phase II, are strongly reminiscent of Karanovo I period of Bulgaria (Özdoğan 1997; 1998b: 448). A few red on buff painted sherds in Phase II are also similar to Early Sesklo painted sherds (Özdoğan 1998b: 449). Bone spatulas, pintaderas and "M" shaped figurines were also found in this phase (Özdoğan 1998b: 448). The chipped stone industry mainly consists of Karanovo I-type retouched blades (Gatsov 2000: 20).

Phase I deposits have been considerably eroded by agricultural activity. In this phase, Töptepe phase I and Kumtepe Ia-Beşiktepe type of pattern burnished bowls were found together with Karanovo III-IV (Özdoğan 1997).

According to Özdoğan, Hoca Çeşme is an Anatolian colony in Turkish Thrace (Özdoğan 1997; 1998b: 450). There is a close similarity in the pottery between early Hoca Çeşme and Hacilar IX-VI and Kuruçay 11-13. According to Özdoğan, the lithic technology is said to have evident traits of the Central Anatolian cultures (Özdoğan 1997). The major typological groups include mostly retouched flakes, followed by end-scrapers on blade and blades with marginal and micro retouch (Gatsov 2001: 105). The most characteristic tool type was bifacially, retouched blades and scrapers on blades that narrow to a point. Points and spear heads were also found in early Hoca Çeşme. The raw material consists of micro crystalline, quartz and local flint (Gatsov 2001). A few blades were made from honey flint, supposedly deriving from Northeast Bulgaria. According to Özdoğan, connections with Anatolia are also occurring documented by figurines and pseudo-stamp seals (cf. Hacilar: Mellaart 1970: Fig.187). On the other hand, figurines and pseudo-stamp seals from Thessaly and Macedonia from sites such as Sesklo and Nea Nikomedeia show close

similarities to examples from Anatolia (Milojčić 1960; Rodden 1964; Efstratiou 1985). The analysis of the animal bones of the lower levels determined that all the animals were domesticated (Buitenhuis 1994). However, the circular building structures of early Hoca Çeşme are different from those on Central Anatolian settlements.

A number of C14 dates are available at Hoca Çeşme (Özdoğan 1997: 28; 1998b) (Table V.2).

Table V.2. Radiocarbon Dates of Hoca Çeşme.

| Lab. Number | Level | 14C Age BP | Cal. BC (1 sigma) |
|-------------|-------|------------|--------------------------|
| Bln-4609 | IV | 7637±43 | 6473 (6459) 6439 |
| Gm-19779 | IV | 7360±35 | 6233 (6224) 6110 |
| Gm-19355 | IV | 7200±180 | 6229(6056,6042,6028)5845 |
| Gm-19357 | III | 7135±270 | 6234(6005,6003,5994)5728 |
| Gnr-19780 | III | 6920±90 | 5886 (5787) 5718 |
| Gnr-19311 | III | 6960±65 | 5955(5838,5822,5809)5734 |
| Gnr-19781 | III | 6900±110 | 5886 (5741) 5665 |
| Gnr-19310 | II | 6890±280 | 6019 (5734) 5535 |
| Gnr-19782 | II | 6890±60 | 5837 (5734) 5718 |
| Gnr-19356 | II | 6520±110 | 5609 (5478) 5369 |

Ref: University of Washington Calibrated Program 2000

Early Hoca Çeşme can be dated 6400-5900/5800 cal. BC (Fig.V.2). As I mentioned earlier, The pottery, especially the white on red painted sherds, and the chipped stone assemblages of phase II at Hoca Çeşme, are reminiscent of the Karanovo I period in Bulgaria (Özdoğan 1998b:448 ; Gatsov 2000). Bulgarian prehistory is dominated by tell Karanovo, one of the largest tells in the Nova Zagora plain. The early Karanovo I layer, is associated with white on red painted ware, consisting of angular bands, triangles and spirals (Georgiev 1961 ; Hiller and Nikolov 1998 ; Nikolov 2000). At Karanovo, Karanovo II immediately follows Karanovo I; although some C14 dates from Karanovo I and II overlap (Görsdorf and Boyadziev 1996:131-132) (Fig.V.3). Karanovo II is characterized by a strong decrease of white on red painted pottery and an increase in channelled decoration on dark burnished surface (Hiller and Nikolov 1997; Nikolov 2000). Boyadziev gave ages of 6000/5900 - 5500/5450 cal. BC for Karanovo I-II (Boyadziev 1995: Table.4). Although Özdoğan correlated Hoca Çeşme II with Karanovo I, C14 dates of Hoca Çeşme II match with the Karanovo II period.

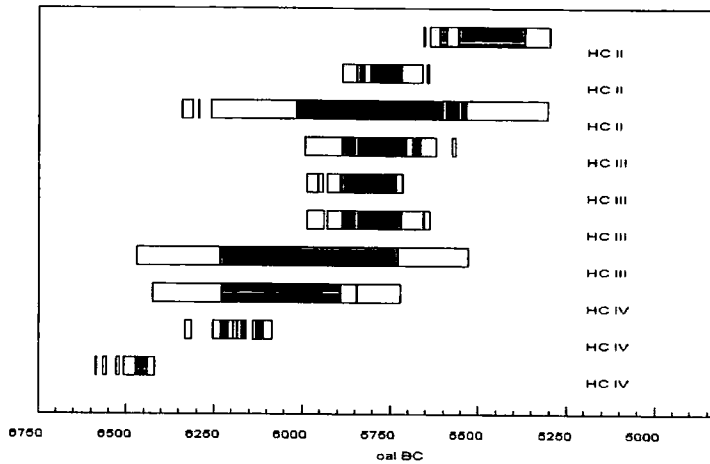


Fig.V.2. Calibrated dates of Hoca Çeşme.

Early Neolithic finds were also noted at the excavation of Aşağı Pinar, just South of the town of Kırklareli (Özdoğan 1999b). During the excavation, a large three-roomed burned house contemporary to Karanovo II in Bulgaria was found. It measures about 16 x 8 m. Round or rectangular bins, an oven and a raised platform were found inside the house. Two large rectangular and four-footed tables with chimney-like projections at the centre of the house are significant (Özdoğan 1999b: 220). Bins were found for the storage of plant foods. Inside the house, Karanovo II-type dark burnish and red wares were found with some white on red painted sherds. The basal layers of the site have not yet been reached. However, a deep sounding revealed numerous monochrome and painted sherds similar to those of Karanovo I and 3 Fikirtepe sherds (Özdoğan et al. 1997; Özdoğan 1999b: 220).

Hamaylitarla is the only early Neolithic site that was investigated during our survey: a flat settlement ca. 17 km West of Şarköy. Besides red slipped burnished pottery, roughouts of stone axes were discovered. Pottery similar to Hamaylitarla was also noted at Kaynarca, near the town of Gelibolu (Özdoğan 1986a; 1999b). Recent surveys in Western Anatolia have revealed new Early Neolithic sites, such as Tepeköy, Araptepe, Höyücek II, Nemrut (Meriç 1993), Coşkuntepe (Seeher 1990), Uğurlu (Harmankaya and Erdoğan 2001),

Tepeüstü - Barbaros, Kyme - Ege Gübre and Bergama - Paşaköy (Fig.V.4). The similarities in ware and shapes occur especially at the sites of Araptepe, Tepeüstü - Barbaros, Kyme - Ege Gübre and Bergama - Paşaköy. There are, as yet no details of the Early Neolithic excavations and C14 dates in Western Anatolia. However, most of Western Anatolian Early Neolithic material can be compared with Kuruçay 13-11 and Hacilar IX-VI in the Lake District (the Early and Late Neolithic period of Anatolia), with some regional differences, such as the occurrence of straw temper and hole-mouth vessels etc. (e.g. French 1965b: 19-20).

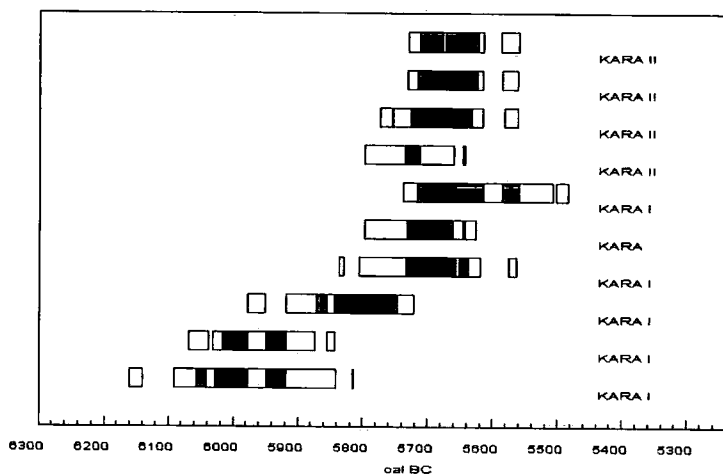


Fig.V.3. Calibrated dates of Karanovo I and II.

Hamaylitarla was dated to the Classic Phase of the Fikirtepe culture by Özdoğan (1997: 21; 1999b: 214). However, I believe that the material from Hamaylitarla as well as from Kaynarca is much more similar to the Western Anatolian tradition than to the Classic Phase of the Fikirtepe Culture (Erdoğan 2000). 90% of Hamaylitarla fine wares are red slipped and burnished, whereas the Fikirtepe culture is marked by dark monochrome pottery. During the Classic Fikirtepe phase, red slipped, burnished wares began to appear. According to Özdoğan, in the Classic Fikirtepe phase, red coloured sherds comprise six to ten percent of the total assemblages (1999b: 213). On the other hand, the excavations at Ilipinar and Menteşe have not revealed red slipped burnished sherds (personal

communication, L. Thissen). In Western Anatolian sites, red slipped and burnished sherds similar to those of Hamaylitarla are found. This type of pottery is very common in Western Anatolia (Meriç 1993; Harmankaya et al. 1997).

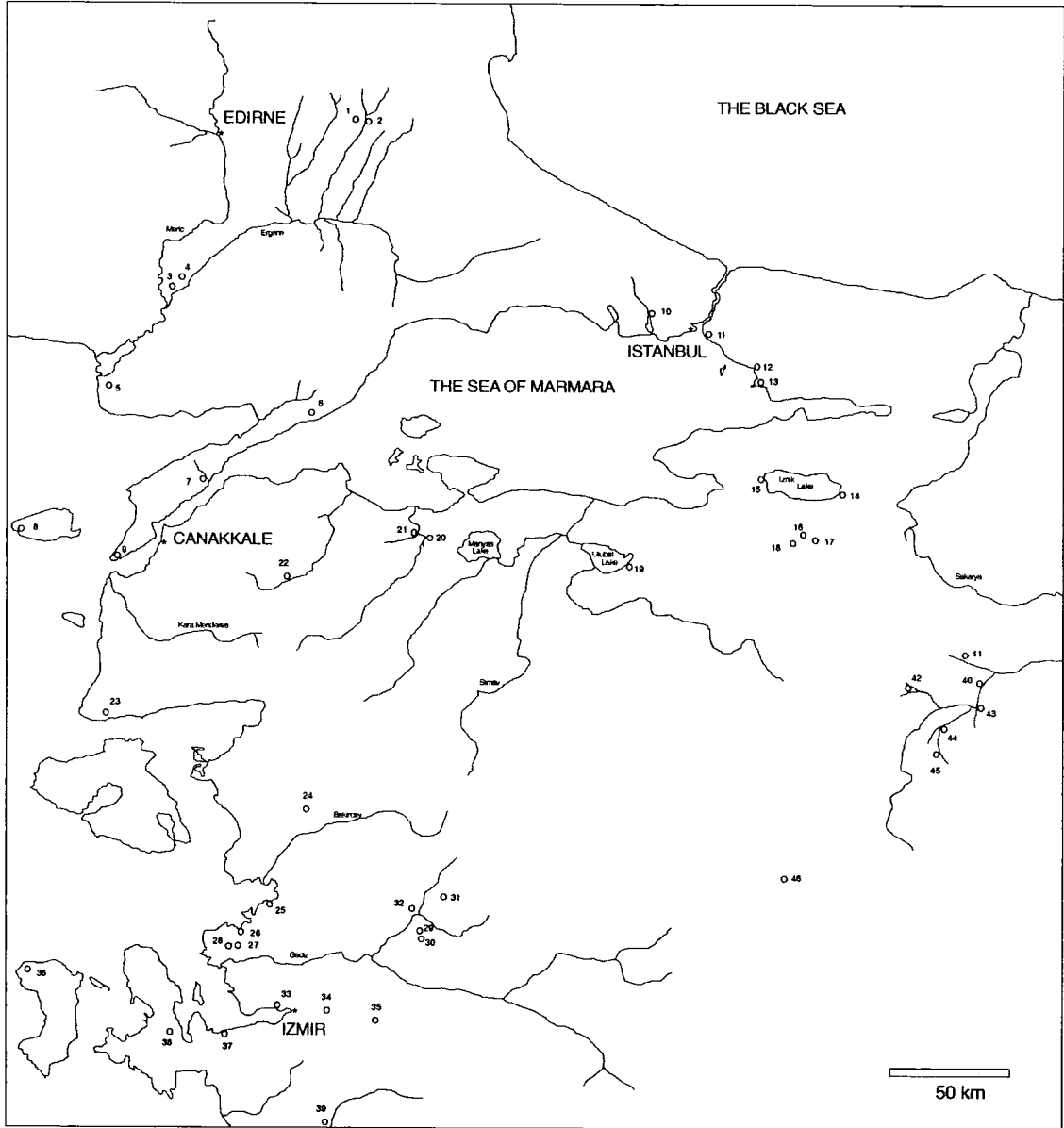


Fig.V.4. Distribution of Neolithic Settlements in Western and North-Western Anatolia.

1. Aşağı Pinar. 2. Bulgar Kaynağı. 3. Maya Baba. 4. Altıağaç. 5. Hoca Çeşme. 6. Hamaylitarla 7. Kaynarca. 8. Uğurlu. 9. Karaağaçtepe. 10. Yarımburgaz. 11. Fikirtepe. 12. Pendik. 13. Tuzla. 14. Höyücek. 15. Ilipinar. 16. Marmaracık. 17. Yenişehir II. 18. Menteşe. 19. Aktopraklık. 20. Taraççı. 21. Yılanlık. 22. Çalca. 23. Coşkuntepe. 24. Paşaköy. 25. Çaltidere. 26. Kyme-Ege Gübre. 27. Höyücek II. 28. Araptepe. 29. Nuriye. 30. Alibey. 31. Morali. 32. Kayışlar. 33. Küçük Yamanlar. 34. Ulucak. 35. Nemrut. 36. Ayio Gala. 37. Limantepe. 38. Barbaros. 39. Tepeköy. 40. Orman Fidanlığı. 41. Demirci Höyük. 42. Kanlıtaş. 43. Keskaya. 44. Fındık Kayabaşı. 45. Asarkaya. 46. Akmakca.

Vertically placed tubular lugs characteristic for the Lake District as well as Western Anatolia are also attested in Hamaylitarla. Vertically placed tubular lugs do occur rarely in the Classic Phase of the Fikirtepe culture (actually only one published sample, Özdoğan 1999b: Fig.33, D.231), but are not characteristic elements for the Fikirtepe Culture.

Though there are some technological differences between the pottery of early Hoca Çeşme and Hamaylitarla, a basic similarity in both sites cannot be denied. Deep bowls with "S" curves, vertically placed tubular lugs, crescentic lugs and bead rims constitute links between both sites. However, some of the forms and decorations are absent in Hamaylitarla. On the other hand, Hamaylitarla pottery is slightly coarser than Hoca Çeşme. The pottery of Hoca Çeşme is elaborately made and the surfaces are lustrously burnished. It is not yet clear whether these differences in pottery are due to chronological (i.e. Hamaylitarla and Hoca Çeşme are of different date), cultural (i.e. Hamaylitarla and Hoca Çeşme belong to different cultures) or social (i.e. Hamaylitarla is a manufacturing site occupied only by craft specialists). In addition, Özdoğan also compared early Hoca Çeşme to Western Anatolian sites such as Tepeüstü and Araptepe (Özdoğan 1997).

Özdoğan argues that in Pendik, above the Fikirtepe Horizon, there is a prehistoric cemetery, which yielded early Hoca Çeşme wares (Özdoğan 1999b: 217). From this point of view Özdoğan suggested that Hoca Çeşme could be later than the Fikirtepe culture (Özdoğan 1993a: 185; 1997: Fig.5). However, there is a chronological inconsistency in this hypothesis, because according to C14 dates, early Hoca Çeşme and the early Fikirtepe culture are contemporary.

The Middle Neolithic: The Middle Neolithic period of Turkish Thrace is represented by the Karanovo III-Vesselinovo Culture of the East Balkans. The Karanovo III-Vesselinovo culture is distributed mainly in the Southern Bulgaria, and was also noted at the sites such as Sitagroi (Renfrew et al. 1986) and Dikili Tash (Séfériadès 1983) in Macedonia and Makri in Greek Thrace (Efstratiou and Kallindzi 1994). It was first discovered in 1939 at Vesselinovo near Jambol by V. Mikov (1939), but the finds were not distinguished from those of the Bronze Age. During further excavations at Karanovo (Mikov 1959; Georgiev 1961), Yassa Tepe (Detev 1975) and Azmak (Georgiev 1965) etc. the culture was widely investigated, and was allocated to its correct chronological position. Karanovo III-Vesselinovo pottery is characterized by well-burnished black, grey or brown monochrome wares. The recent excavations at Karanovo show that a hiatus between Karanovo II and III is not attested (Hiller and Nikolov 1997), and the pottery is said to have a direct development from its predecessors. Forms consist of straight-sided dishes, sometimes with internally thickened rim and four long cylindrical legs; the thickened rim is usually decorated with parallel, transverse or oblique incisions; necked jars with horned

and knob handles; The mugs with flat base and horned handles; carinated rim bowls; rounded bowls usually have a plastic band on the rim or body, and decorated with incised or impressed motifs (Nikolov 1992; 1995; 2000). Boyadziev gives dates of 5500/5450 - 5200/5100 cal. BC for Karanovo III (Boyadziev 1995: Table.4).

The Middle Neolithic period in Turkish Thrace were marked by an increase in the number of the settlements compared with the Early Neolithic. The most important Karanovo III sites are Köprübaşı in the Tunca basin, Koyunbaba and İkilik in the Teke basin, Altıağaç and Gavurdere in the Meriç area (Harmankaya et al. 1998). Hoca Çeşme phase I was also yielded numerous sherds of Karanovo III. However, the Karanovo III - Vesselinovo Culture is well known from the excavations of Aşağı Pinar. In Aşağı Pinar, there is a gap between layer 6 and the new occupation, layer 5. Karanovo III elements now began to appear. Two-roomed rectangular wattle-and-daub houses all set side by side were found in layer 5. Houses were furnished with inside ovens and separated by alleys. The settlement was surrounded by a ditch (Özdoğan 1999a: 19). Aşağı Pinar 5 can be dated to Karanovo II-III (Özdoğan 1998a: 76). In layer 4, Karanovo III elements increased. Jars with horned or knob handles, carinated rim bowls, straight-sided dishes with internally thickened rim are common forms in this phase (Özdoğan 1999a: Res.5). The architectural remains suggest that houses were built of wattle-and-daub. The rather large rectangular houses measured ca 10/9x8/7 m, and set side by side. Large rooms were divided into smaller activity areas and all houses have courtyards (Özdoğan 1999a). The Layer 4 settlement was surrounded by a wooden palisade supported by stones at the base. According to uncalibrated C14 dates, Aşağı Pinar 4 was dated ca. 6350-6300 BP (Özdoğan 1998a: 75), ca. 5400 cal. BC.

There is no evidence of Karanovo III-Vesselinovo settlements in the Northern shore of the Sea of Marmara, except at Yarımburgaz cave. As I mentioned in chapter III, this can be explained by the coastal morphological change in the area. A few Karanovo III sherds were found in unstratified deposits at Yarımburgaz (Özdoğan et al. 1991a: 74).

Numerous handles of Karanovo III type were also found at Hoca Çeşme I (Özdoğan 1993a: Fig.1 and 3).

The Late Neolithic: On the basis of our surveys in the Edirne region and the earlier surveys and rescue excavations, the Late Neolithic period of Turkish Thrace is marked by six different ceramic networks - Töptepe, Maslıdere, Karanovo III-IV¹⁰, Kumtepe Ia, Çardakaltı and Kalojanovec. However, some of them are chronologically earlier than others.

The Late Neolithic in the Southern part of Turkish Thrace is represented by the Töptepe Culture. During the Töptepe excavations, four phases were discovered. Only

¹⁰ On the basis of new excavations at Karanovo, the early stage of Karanovo IV was called Karanovo III-IV (Hiller and Nikolov 1997).

onewell preserved building was found in phase 3. A rectangular wattle-and-daub building, its Eastern part is separated from the main room by a thin partition. At the West end of the room there is an oval, domed oven with an ash pit. Next to the Northern wall there was a large raised platform (Özdoğan et al. 1991; Özdoğan 1990). In the side of the room a large anthropomorphic vessel was found, measuring 35 x 35 x 85 cm. The vessel has a rectangular body, which is raised on four conical feet. Ears with holes, eyes, nose, breasts and arms were shown in relief. It was decorated by red paint (Özdoğan et al. 1991).

The Toptepe pottery is characterized by two distinct ware types - micaceous and coarse (Özdoğan et al. 1991). The micaceous ware is white mica-tempered with a dull burnish. Surface colours are in tones of dark grey and black. The most common form is a tall-necked carinated jar, usually with a strap handle and with shallow incised decoration (Özdoğan et al. 1991: Fig.22;9). Straight-sided bowls and pedestal bases are also common (Özdoğan et al. 1991: Fig.22;1,7). The coarse ware has roughened exterior surfaces with nail, wedge or stroke impressions, applied bands with finger impressions or applied lumps of clay. The interior surfaces, however, are smoothed or slightly burnished. The most common shape is a rounded bowl, sometimes with carination (Özdoğan et al. 1991: Fig.22;4 , Fig.20;12-13). The Toptepe coarse ware was found at Hoca Çeşme layer 1 (Özdoğan 1993a), unstratified deposits of Yarimburgaz cave (Özdoğan et al. 1991), and Tekke Mezarligi and Baglar Çeşme in the Vize plain (Özdoğan 1995: 531). The Toptepe micaceous ware were found at Alpallu, on the Northern side of the Ergene River (Mansel 1938:22-23), and at Arpaç / Kaynaklar in the Tunca basin (Erdoğu 1997). The Toptepe pottery was also found at Aşağı Pinar 3, together with Karanovo III-IV pottery (Özdoğan 1998a:75). On the other hand, the coarse ware of Toptepe seems to occur at the Karanovo III-IV settlements in Southeast Bulgaria (cf. Drama: Lichardus et al. 2000: Taf.26;8,13).

Only three C14 dates are available at Toptepe (Özdoğan et al. 1991) (Table V.3). The Toptepe culture can be dated to ca 5300 / 5200-4900 cal. BC (Fig.V.5)

Table V.3. Dates of Toptepe.

| Lab. Number | Phase | 14C Age BP | Cal. BC (1 sigma) |
|----------------|-------------|------------|----------------------------|
| HD 13591-13339 | 2 (level 4) | 6410±180 | 5526 (5456,5454,5369) 5151 |
| HD 13590-13235 | 3 (level 5) | 6095±40 | 5054 (4997) 4862 |
| HD 13589-13321 | 3 (level 5) | 6155±40 | 5208 (5191,5183,5061) 5003 |

Ref: University of Washington Calibrated Program 2000

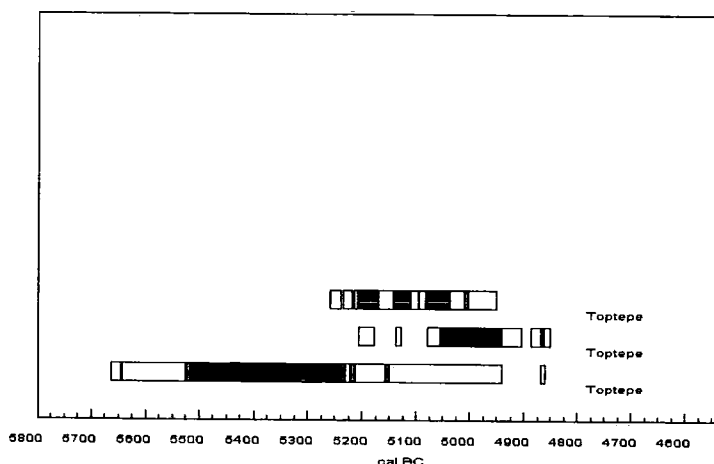


Fig.V.5. Calibrated dates of Toptepe.

The Late Neolithic in the Western part of Turkish Thrace is represented by the Maslidere culture. This culture is recognised in our surveys in the Edirne region. It was distinguished on the basis of pottery that I term “Maslidere” after the most prolific site, near the town of Uzunköprü (Özdoğan 1989: 204; Erdoğan 1999a). Almost all sites with typical pottery of the Maslidere type are known from the Meriç-Uzunköprü region. A few Maslidere sherds were also found at Değirmençeşme in the Edirne region (Erdoğan 1999a). Maslidere pottery is similar to the Toptepe coarse ware. Although the fabric and decorative techniques seem similar to Toptepe, the motifs are quite different. The characteristic dot impressions in combination with incised lines from Maslidere are not attested in Toptepe. Also missing in the sites of Maslidere culture are the micaceous wares of Toptepe. There is no excavation at Maslidere sites yet. Özdoğan compared the Maslidere pottery to the Criș-Körös-Starčevo culture of Central Balkans, dating it to the Early Neolithic period (Özdoğan 1989). However, his analysis was before the rescue excavation at Toptepe, and he accepted that most of his analysis about the pottery was wrong until the rescue excavations (Özdoğan et al. 1991). On the basis of pottery similarities with Toptepe, the Maslidere culture can be dated ca. 5000 cal. BC. Typical horned handles of Karanovo III and III-IV types, found on the Maslidere pottery, support this dating.

The Late Neolithic in the Northern part of Turkish Thrace is represented by the Karanovo III-IV (or Early Karanovo IV) culture of Bulgaria. In the Edirne and Kirkclareli regions, the Karanovo III-IV culture was preceded by the Karanovo III-Vesselinovo assemblages. Our knowledge is essentially based on the excavation results from Aşağı Pinar. In Aşağı Pinar, layer 3 can be dated Karanovo III-IV period, and immediately follows layer 4 (Özdoğan 1998a: 74-75). There is a gradual development in the pottery. Tall-necked carinated jars with strap handle and channelled decoration, pedestalled bowls, bowls with thickened carination with channelled decoration and triangular boxes are common elements (Özdoğan 1998a). Knob-like handles continue with some changes. In Aşağı Pinar layer 3, typical Toptepe micaceous ware and coarse ware were found. In addition, closest examples for tall-necked carinated jars and pedestals with cut outs and bowls with thickened carination can be found at Paradimi in Greek Thrace (Bakalakis and Skellariou 1981: Taf.XXI;1-5 and Taf.XX;1-7). According to uncalibrated C14 dates, layer 3 was dated ca. 6300-6200 BP. (Özdoğan 1998a: 75), ca. 5200 cal. BC.

At the end of the Late Neolithic period, changes are observed in material culture in the Edirne and Kirklereli regions. On the basis of our surveys in the Edirne region, the Bulgarian Kalojanovec type of pottery was found together with Çardakalti type of local pottery in a number of settlements in the Edirne region. The Kalojanovec culture was well investigated in Hlebozavoda, near Nova Zagora (Kancev and Kanceva 1988). In Hlebozavoda, three architectural levels of 1.20 m were found, belonging to the Kalojanovec culture. Houses are of wattle-and-daub with rectangular shapes. There are no major differences in the shapes and decoration of the pottery between layers. The most common shape is the straight-sided dish with flat or ring base (Kancev and Kanceva 1988: Tab.I;6-8 and Tab.II;6-7). They are decorated with wide excised lines with white encrusted. Generally both interior and exterior surfaces are decorated. Occasionally excised lines are combined with dots. The other main shape is a carinated rim bowl, decorated with channelling, set obliquely on the carination (Kancev and Kanceva 1988: Tab.II;8). These bowls show a direct development from its predecessor, Karanovo III-IV. Necked jars with large globular bodies were also decorated with channelling (Kancev and Kanceva 1988: Tab.IV;5). Occasionally they are with tongue-like handles. Carinated bowls, rounded bowls, lids and zoomorphic handles also occur (Kancev and Kanceva 1988: Tab.I;2-3 ; Tab.II;1-5 ;Tab.IV;1-2). In Drama Karanovo IV layers were divided into 3 phases (Lichardus et al. 2000). In the Karanovo IVb layer, typical Kalojanovec dishes were found together with Karanovo III-IV sherds. Kalojanovec dishes and other characteristic shapes occur in the Karanovo IVc layer at Drama (Lichardus et al. 2000).

The site of Çardakalti is located ca. 4 km North of Edirne. In 1960, Ş. A. Kansu undertook a small-scale excavation, finding a single layer (Kansu 1963). In this layer, typical Kalojanovec sherds were found together with some local pottery, called

“Çardakalti” pottery (Erdoğu 1997). During our 1995 survey, a disturbed site, Kumocağı / Avariz on the Tunca River was investigated. The site has been damaged by a large trench dug for quarrying of sand. A single cultural layer in the profile cut was recovered. In this layer, Kalojanovec and Çardakalti pottery were found together (Erdoğu 1997). Çardakalti pottery is characterized by two distinct wares - buff or reddish buff coloured ware and black burnished ware. The first is characterized by grooved wavy lines, combined with triangular dot impressions, and the second is characterized by white paint¹¹.

In the Kırklareli region, no Çardakalti pottery was found. Aşağı Pinar layer 2 yielding pottery of Kalojanovec. Aşağı Pinar has similar development to Drama in Southeast Bulgaria. Aşağı Pinar 2 may be dated to Karanovo IVb at Drama. According to C14 dates, Aşağı Pinar layer 2 was dated to uncalibrated 6150-6000 BP. (Özdoğan 1998a), ca. 5000 cal. BC. No Çardakalti pottery was found either in Drama or other Bulgarian sites. Çardakalti pottery in the Edirne region may be dated at the very end of the Late Neolithic or the beginning of the Chalcolithic period.

The Beşiktepe-Kumtepe Ia culture of the Troas extended into the Gelibolu Peninsula. Beşiktepe (Sivritepe) is situated ca. 7 km Southeast of Troy, on the Aegean coast. It was first excavated by Schliemann in the late nineteenth century and by W. Dörpfeld in 1924 (Lamb 1932). Later, rescue excavations were conducted by M. Korfmann in 1983-87 (Korfmann 1985). The 1983-87 rescue excavation took place in only a part of intact basal layers and was dated to the beginning of the 5th millennium BC. Kumtepe is situated ca. 5 km North-West of Troy, ca. 2 km inland from the Aegean coast. It was first excavated by J. Sperling and H. Z. Koşay in 1934 (Sperling 1976), and later, by M. Korfmann in 1993-97 (Korfmann et al. 1995). The earliest layer Ia in Kumtepe gave similar material to Beşik-Sivritepe. Beşiktepe-Kumtepe Ia pottery is brown, black, red and red coating and burnished (Harmankaya et al. 1998). Off-set necked jars, carinated vessels, horned handles, wish-bone handles, pattern burnished bowls and white painted vessels are characteristic elements of this culture (Yakar 1985: 122). Beşiktepe-Kumtepe Ia pottery was also found at Töptepe and Hoca Çeşme in the Southern part of Turkish Thrace. In Töptepe, Beşiktepe-Kumtepe Ia pottery was found in pits of Phase 1 (layer 0). Virtually straight-sided bowl, wish bone handles and off-set necked jar from Töptepe (Özdoğan et al. 1991: Fig. 21; 9,12,15) can be compared with Beşiktepe-Kumtepe Ia examples (Sperling 1976: Fig. 8;124,115 ; Fig. 11;113,127 ; Lamb 1932: Fig. 14;4,5). A typical

¹¹ On the basis of the white on black painted sherds, K. Leshtakov argues that these vessels should be dated to the Maritsa period, not Karanovo IV (Leshtakov 1999:145, note:55). According to him these are graphite painted pottery. First, as I mentioned before, white on black painted pottery was found together with Kalojanovec-type pottery in the same layer, and this level may be dated at the very end of the Late Neolithic or the beginning of the Chalcolithic period. There is as yet no excavation. However, the layer can be seen clearly. Secondly, these vessels are not graphite-painted. I believe that white paint and graphite paint are very different but are all called graphite paint in Bulgaria. We need to make detailed analyses. Thirdly, at the contemporary site of Arapi in Thessaly white on black painted sherds close to our examples were also recovered (Hauptmann and Milojević 1969 Taf.3;1-4,6 ; Taf.7;1-2).

Beşiktepe-Kumtepe Ia pattern burnished bowl and a white painted sherd was also found in Toptepe (Özdoğan et al. 1991: Fig.21;5). Beşiktepe-Kumtepe Ia pattern burnished bowls were also found in Hoca Çeşme phase I (Özdoğan 1993a). According to C14 dates, the Beşiktepe-Kumtepe Ia culture can be dated 4900 / 4800-4500 / 4400 cal. BC¹² (Korfmann and Kromer 1993). On the basis of this date, we may suppose that the Beşiktepe-Kumtepe Ia culture covers from the end of the Late Neolithic (?) and the whole of the Early Chalcolithic period in the Southern part of Turkish Thrace.

In Central, North and Northwest Anatolia, materials similar to the Balkan Karanovo III and Karanovo III-IV cultures were found. Although Anatolia covers an area as large as the Balkans, only a few excavations have been conducted, and there are still gaps in our knowledge of the chronological sequence of Anatolia. In the early 1930s, Alişar Höyük was the only excavated tell in Central Anatolia. The basal layers of Alişar's ca.20 m of archaeological deposits were, however, dated to a single period - the Late Chalcolithic / Early Bronze Age I (e.g. Orthmann 1963). The chronological framework of Alişar became the keystone for dating all Central Anatolian cultures. In the mid 1930's to the 1950s, more sites were excavated, such as Alaca Höyük, Büyük Güllücek, Horoztepe, Pazarli, etc. Since none of them had such thick prehistoric layers as at Alişar, the chronological framework of Alişar has been also applied to these settlements. In the 1960s, Neolithic sites like Hacilar, Çatal Höyük, Süberde and Aşikli Höyük were discovered on the Anatolian plateau. However, these sites were seen as trading posts for the obsidian and salt trade, and not as indicators of a developing Neolithic culture on the Anatolian plateau (Özdoğan 1995: 28). Similarities between the basal layers of Alişar and other prehistoric settlements and the Danubian region were noted by several archaeologists, such as Fewkes (1936), Childe (1957), Koşay (1963) and Schachermeyr (1976) mostly as a basis for a diffusionist model (see Chapter I). Since the 1960s, archaeology has been gradually but inexorably transformed by a new emphasis on theory and methodology, the so-called "new archaeology". The arguments now have focused on the relationships between settlements systems, economy and social structure. On the basis of the large-scale application of C14 dates in Europe, the dates of South-eastern Neolithic cultures were pushed back 2-3000 years. However, the chronology of Central Anatolian cultures has persisted up to the present.

On the basis of pottery evidence, several "groups" with Balkan-type materials can be distinguished in different geographical regions in Anatolia. The paucity of C14 dates makes chronological comparison difficult. After all, similarities in material culture between two regions do not always mean that material from both regions belongs to the same chronological horizon.

¹² C14 dates of Beşiktepe-Sivritepe are 5629±51 BP, 5675±35 BP, 5687±53 BP, 5760±37 BP, 5829±62 BP and 5925±79 BP. However, one date - 6567±84 BP - can be calibrated to 5600-5450 cal. BC.

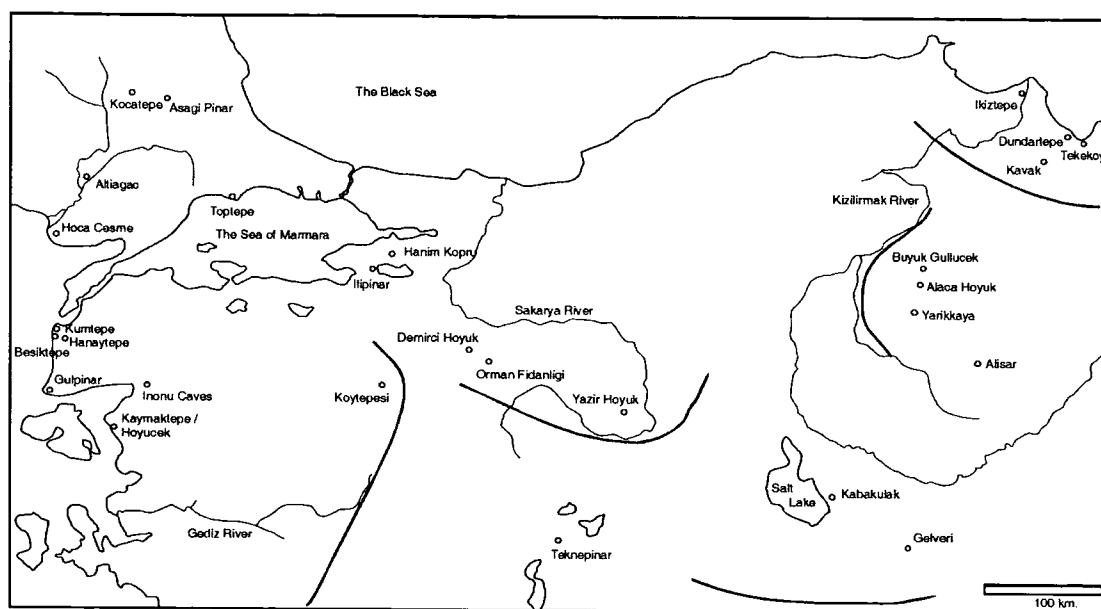


Fig.V.6. Neolithic and Chalcolithic settlements in Anatolia mentioned in the text.

The Ilipinar VB Group of Northwest Anatolia: Ilipinar is located North of Bursa, 1,5 km South of Orhangazi, ca. 2 km West of the Iznik Lake (Fig.V.6). It was excavated in 1988-1998 (Roodenberg 1995; Roodenberg 1999b). The pottery of Ilipinar VB is said to have evident traits of the Balkans (Thissen 1989/90). Ilipinar VB consists of two architectural levels. An oval-pit house, ca. 3x5 m and 0.5 m deep was found in the first layer (Roodenberg 1999b: 199). Inside the house, there is an earthen bench, a grinding stone, an oven and vessels full of charred grains (Roodenberg 1999b: Fig.10). The second layer consists of pits and some floors. The dominant ware is coarse, grit-tempered, brown, thick-walled and lightly burnished. Besides coarse ware, grit-tempered fine ware sometimes with orange, white and red rounded particles and calcite-tempered fine ware also occur. Dark tones are dominant. Rounded bowls, necked jars, internally thickened rim dishes, horned and ribbon handles are common forms. The most common decoration is channelling. The interior rim of thickened-rim dishes are decorated in this technique (Roodenberg et al. 1989/90: Pl.2). They are set obliquely, vertically or in a herring-bone pattern. Occasionally the whole interiors of the bowls are decorated in this technique (Roodenberg 1999b: Fig.8;3-6). Channelling is also used on necked jars and rounded bowls (Roodenberg 1999b: Fig.8;1,2).

Close examples for the Ilipinar VB pottery can be found in the Early Vinča, Karanovo III and III-IV Cultures. The connection with Vinča is strengthened by the channelling decorated sherds. Ilipinar channelling sherds have parallels at Early Vinča sites (e.g. Chapman 1981: Fig.16;1,5 ; Fig.19;1). For internally thickened rim dishes with channelling decoration, similar examples can be found at Karanovo III and Karanovo III-

IV sites (cf. Karanovo: Hiller and Nikolov 1997: Tafel.4;21 ; Tafel 11;21,22 ; Anza IV: Gimbutas 1976: Fig.72).

In Ilipinar VB, two pattern burnished bowls were found in a pit (Roodenberg et al. 1989/90: Fig. 16;8-9). They show remarkable similarities to pattern-burnished bowls from the Beşiktepe-Kumtepe Ia culture of Western Anatolia (Korfmann 1985: Fig.11).

During the surface surveys of M. Özdoğan, Ilipinar VB pottery was also found in Hanımköprü, ca. 15 km North of the Iznik Lake (Özdoğan 1986b).

According to C14 dates, Ilipinar VB can be dated ca. 5500-5400 cal. BC. (Roodenberg 1999b: 200). These dates match with early Karanovo III.

To sum up, the significant similarities in pottery between Ilipinar VB group and the Balkan Karanovo III group are horned handles and internally thickened rim dishes with channelling decoration; both occur in the dark burnished ware. The channelling decoration is also common in Early Vinča.

The Büyük Güllücek Group of Central Anatolia: Büyük Güllücek is a small tell (ca. 50x50 m) near the village of Büyük Güllücek, Southwest of the town of Çorum (Fig.V.6). It was excavated in 1947 and 1949. The earliest settlement lay on the bedrock and dated to the Chalcolithic period (Koşay and Akok 1957). It consists of two architectural layers. Two or three-roomed houses were built by sun-dried mud bricks on stone foundations. Some rooms were furnished with ovens (Koşay and Akok 1957: 3). The pottery is characterized by red and black coloured wares, sometimes burnished (Koşay and Akok 1957:8). Various decorative techniques have been employed, such as incised, impressed, plastic and white paint. Impressed small dots and triangles made by a stick are known and deep or shallow Incised lines are common. Occasionally wide excised lines occur. Generally, incised and impressed decoration techniques are executed on the same vessel. Designs consist of parallel horizontal, vertical, oblique and cross lines. Lozenges, ladder patterns and triangles also occur (Koşay and Akok 1957: Taf.XIV ; Taf.XV ; Taf. XVII). White paint was applied over a black surface. Sometimes the paint is hardly visible and comes off. Designs consist of thin parallel vertical lines or cross lines (Koşay and Akok 1957: Taf. XIII). Designs are applied on inside rounded bowls or dishes. The range of shapes consists of bowl and jars with out-turning rims, rounded bowls, "S" shaped bowls, Straight-sided dishes, sometimes with pedestal base, necked jars with globular body, sometimes sharp carination at the body (Koşay and Akok 1957: Taf.XXIII ; Taf.XXVI). Horned handles, knob-like handles and ribbon handles are also characteristic (Koşay and Akok 1957: Taf.XIX). There are also handles with zoomorphic terminals (Koşay and Akok 1957: Taf.XXI;2).

The chipped stone industry consists mostly of blades. The raw material used in the chipped stone industry consists of flint and obsidian (Koşay and Akok 1957: Taf. XXXII ; Taf. XXX ; Taf. XXXIV ; Harmankaya et al. 1998). Two large flat copper axes with wide

cutting edges were also found in Büyük Güllücek (Koşay and Akok 1957: Taf. XXXV ; Esin 1969:130). A copper dagger and a pin were also found in a grave (Kosay and Akok 1957: Taf. XXXV). Copper objects of Büyük Güllücek show similarities to Bulgarian finds (Černych 1978a: Taf.14;5,8,9 ; Taf. 29;17).

The horned handles of Büyük Güllücek (e.g. Koşay and Akok 1957: Taf. XIX) show remarkable similarities to horned handles from the Karanovo III and III-IV Cultures. The closest examples can be found at Sitagroi I (Renfrew et al. 1986: Fig.11.6;2,5) and at Anza IVa (Gimbutas 1976: Fig. 96;5,6). Straight-sided dishes with pedestal bases from Büyük Güllücek (Koşay and Akok 1957: Taf. XXV:4,5) only also reveal similarities with Anza IVa (Gimbutas 1976: Fig.78;2,5,7), but they are attested in the fine ware. However, many characteristic forms of the Karanovo III and Karanovo III-IV cultures, such as bowls with thickened carination, straight-sided dishes with internally thickened rim and channelling decoration etc. are absent at Büyük Güllücek.

Comparable material to Büyük Güllücek pottery also comes from the Aegean islands and probably Western Anatolia. Bowls with out-turning rims and "S" shaped bowls can be compared with the material from the site of Tigani at Samos layers II and III (Felsch 1988: Taf.58:179 , Taf.60:235, Taf.61;249b and 247). Compare also horned-handles and animal head handles (Felsch 1988: Taf.59;216, Taf.55;93, Taf.52;43, Taf.61;246a, 257, Taf.66;258) with Büyük Güllücek (Koşay and Akok 1957: Taf.XIX and Taf. 21;2). White on black painted sherds of Büyük Güllücek (Koşay and Akok 1957: Lev.XII) can also be compared to Aegean sites, such as Emporio X-VIII at Chios (Hood 1981: Fig.139) and Kalythis cave at Rhodes (Sampson 1987: Fig.52 and 53). Although many similarities exist between the Büyük Güllücek pottery and the Aegean islands, pattern burnished decorations attested at Aegean islands as well as Western Anatolia are absent at Büyük Güllücek, and various designs attested at Büyük Güllücek are absent at the Aegean islands.

Büyük Güllücek pottery is also found in Alaca Höyük, ca. 15 km south of Büyük Güllücek (Fig.V.6). Alaca Höyük is a famous Hittite site. A deep sounding in the 1930s revealed ca 4 m thick of Chalcolithic layers (Koşay and Akok 1966 ; Harmankaya et al. 1988). The Chalcolithic phase (Phase IV) consists of multi-roomed houses were build by sun-dried mud bricks on stone foundations. On the basis of pottery evidence, Thissen argued for the presence of two different assemblages at Alaca Höyük in the Chalcolithic phase, although these have been interpreted by the excavators as one homogeneous phase (Thissen 1993). Thissen called them as "earlier Chalcolithic" and "later Chalcolithic" (Thissen 1993). The correlation of Alaca Höyük (earlier Chalcolithic) material to Büyük Güllücek has been already noted by Yakar (1985: 180), Alkim (1988: 184-187) and Özdoğan (1993a). Almost all wares found at Büyük Güllücek are also present at Alaca Höyük. Decoration techniques and designs are also the same. However, some jar forms

seem to be different (Koşay and Akok 1966 Pl.148). Karanovo III or III-IV type of horned-handles was also found at Alaca Höyük (Koşay and Akok 1966: Pl.151).

The Ikiztepe II Group of the Black Sea Littoral: Ikiztepe is located ca.55 km West of Samsun in the delta of Kizilirmak (Fig.V.6). Excavations were started in 1974 and the project is running since then. Ikiztepe consists of four tells side by side. Ikiztepe tell II contains Chalcolithic layers. It is 115x90 m in size and 22.5 m high. The earliest phase III contains 8 architectural layers and is dated to the Late Chalcolithic period by excavators (Alkim 1986). Phase II contains also 8 architectural layers and is dated to the Early Bronze Age I. However, some archaeologists, such as Thissen, argued that the phase II should be dated to the Chalcolithic period (Thissen 1993). Rectangular wooden houses with fireplaces and ovens were discovered in Phase III and II (Harmankaya et al. 1998). The Phase II pottery is characterized by black, grey, greyish-brown slipped and well-burnished wares (Alkim et al. 1988). Forms consist of rounded bowls, straight-sided dishes, round-sided bowls, carinated bowls, "S" shaped bowls and sometimes carinated, necked jars. Horned handles and knob-like handles are also common (Alkim et al. 1988: Pl.XXXIV;7-15 ; Pl.XXXII;7). Various decorative techniques are represented, such as incised, grooved, impressed, white painted and plastic (Alkim et al. 1988: Pl.XXXVI). White paint is applied on inside of dishes or round-sided bowls. Designs consist of thin parallel horizontal, vertical or cross lines (Alkim et al. 1988: Pl.XXIV;10,14 ; Pl.XXV;5,11). Sometimes, white paint and grooved, incised and impressed decoration used together (Alkim et al. 1988: Pl.XXVI;1-2). Incised decoration is most common. Chevrons with parallel oblique lines are very characteristic design (Alkim et al. 1988: Pl.XXX;7 ; Pl. XXXVI;6-9).

Ikiztepe material can be compared with Büyük Güllücek. Some forms, such as necked-jars (Alkim et al. 1988: Pl. XXXI;1,2), horned handles (Alkim et al. 1988: Pl. XXIV;7-15), handles with zoomorphic terminals (Alkim et al. 1988: Pl.XXIV;16-21), white painted bowls (Alkim et al. 1988: Pl. XXIV;10,14) and designs (Alkim. et al. 1988: Pl.XXXVI) look similar on both sites.

Comparable material for the Ikiztepe II pottery also comes from the Aegean islands sites such as Samos-Tigani and Chios-Emporio. Necked-jars, carinated bowls, rounded bowls, dishes, horned handles from Ikiztepe II can be compared with Tigani I-III (Felsch 1987: Taf. 57;156 ; Taf.50;9,12 ; Taf. 52;43) and Emporio X-VIII (Hood 1981: Fig.130;251-225 ; Fig.122;141,135,136 ; Fig.121;77 ; Fig.120;39,35,45). For bowl with lug-handle of Ikiztepe (Alkim et al. 1988: Pl.XXXVI;3), similar examples can also be found at sites such as Tigani and Emporio (Felsch 1988: Taf.52;42 ; Hood 1981: Fig.135;326). Decoration and designs of Ikiztepe (e.g. Alkim et al. 1988: Pl.XXXVI;9,14) show similarities to Tigani (Felsch 1988: Taf.61;248).

According to H. Alkim, Ikiztepe II (Phase III) pottery has different forms and different manufacturing techniques than Phase II (H. Alkim 1986:101). Forms consist of

straight-sided deep bowls with handles, carinated bowls and jars. H. Alkim also compares the Phase III material to the Aegean islands and the Balkans (H. Alkim 1986: 106-109).

The chipped stone industry consists mostly of blades from flint and quartz. Obsidian is also used. Triangular arrowheads are very characteristic (Alkim et al. 1988: Pl.LXXX). According to C14 dates, Phases II and III can be dated around ca. 4400/4300 cal. BC¹³ (H. Alkim 1986 ; Bilgi 2001).

Comparable materials for İkiztepe II also comes from disturbed tell of Kavak (Kaledoruğu), ca. 46 km South of Samsun (Fig.V.6). It was excavated in 1940-41 (Kökten et al. 1945). The early layers have revealed jet-black burnished ware with incised on grooved decoration, red, brown and black burnished ware with impressed decoration, white on black painted sherds and horned-handles (Kökten et al. 1945). The early deposit of Düdartepe in Samsun is also contemporary with İkiztepe II (Thissen 1993).

The Orman Fidanlığı Group of Northwest Anatolia: Orman Fidanlığı is located ca 5 km South-West of Eskişehir, on the gentle slopes of the Karabayırlar to the West and South of a rocky outcropping (Fig.V.6). The site was buried by erosion as deep as eight to ten meters in the south. The Southern part of the settlement has been completely destroyed by large trench dug for the quarrying of sand. The site was excavated in 1992-94, and six cultural layers were discovered (Efe 1996; 2001). The final phase of settlement at Orman Fidanlığı, Phase VII concentrates to the west of rocky outcropping and reaches much further to the north. Phase VII contains two architectural layers. In the lower layer two foundation walls of small stones, a yellow floor and half of an open hearth were found (Efe 2001: 14). The second layer contains dense concentrations of stones and pits (Efe 2001: 15).

The pottery has been sorted out into six ware groups (Efe 2001: 25). Straw-tempered ware with brown and black well burnished surfaces is common. Black burnished ware with stone inclusions is also common. Bowls of this ware are often black-topped. Buff burnished and Grey-brown burnished, red slipped wares are also occur. A micaceous ware with black or grey burnished surfaces called "Yazır Höyük Ware" was also found. Yazır Höyük is situated about 100 km East of Orman Fidanlığı (Fig.V.6). The ranges of shapes consist of shallow dishes with either straight and rounded body or sharply outturning rims, necked jars and globular bowls are common forms (Efe 2001: Fig.17-20). Horned handles are characteristic of Level VII (Efe 2001: Fig.20). White paint appears at the interior rims of the dishes (Efe 2001: Fig. 17-19) or sometimes on necked jars (Efe 2001: Fig.20;304,306). In Level VII, a piercing tool and a pin with a double spiral head from copper was found. For rounded bowls or dishes with white painted decoration, similar examples can be found at sites such as İkiztepe II in the Black Sea Littoral (e.g.

¹³ C14 dates of İkiztepe were published by Alkim (1986), Ergin and Güler (1981) and Bilgi (2001). Some C14 dates are; İkiztepe II: Phase III = 5454±93 BP, 4480±130 BP, Phase II = 5552±120 BP, 5272±171 BP, 4028±95 BP. İkiztepe I: Phase III = 5470±60 BP, 4630±50 BP, 4437±83 BP.

Alkim et al. 1988: Pl.XXV;5,11) and Büyük Güllücek in Central Anatolia (Koşay and Akok 1957: Lev.XIII). White on black painted dishes of Orman Fidanlığı can also be compared the Aegean sites, such as Kalythis cave at Rhodes (Sampson 1987: Fig.52;583 and 53;594,602). Horned handles of Orman Fidanlığı also show close similarities to horned handles from Aegean sites (e.g. Samos-Tigani: Felsch 1988: Taf.63;237 , Taf.64;275). Dishes with sharply outturning rims at Orman Fidanlığı show good parallels to Late Chalcolithic pottery from phases 1 and 2 at Beycesultan in Western Anatolia (Lloyd and Mellaart 1962: Fig.P.1;32,37 Fig.P.7;33)

Similar Orman Fidanlığı VII pottery is known from Yazır Höyük. It is a small tell ca. 90 m in size and 20 m high. The site has been destroyed by a large trench dug of illegal diggings. The destruction trench is ca. 10x40 m, and 8-9 m depth. In 1955, documenting of the stratigraphic profile was done by R. Temizer (Temizer 1960). At least three architectural layers were identified (Temizer 1960). The houses must have been constructed of mud bricks on stone foundations. Almost all pottery was collected in the third layer. The pottery collected by villages was also investigated. Pottery has been sorted out into three ware groups (Temizer 1960). The first group is black, grey or dark brown coloured and burnished ware with fine textured clay, tempered with sand and grit. The second group is red or reddish brown coloured and burnished coarse ware, and the third group is brown slipped coarse ware. Round sided bowls and bowls with flaring sides or with everted necks with white painted decoration are the most common forms. White paint appears on interior rims (Temizer 1960: Fig.7a ; Efe 2000: Fig.IV;1,7). Necked jars (Temizer 1960: Fig.12 ; Efe 2000: Fig.IV;14) and horned handles (Temizer 1960: Fig.14b ; Efe 2000 Fig.IV;15-17) are similar to material in Orman Fidanlığı VII. Incised lines with dot impressions are also noteworthy (Temizer 1960: Fig.17 ; Efe 2000: Fig.IV;21-22). Close parallels for the white painted bowls of Orman Fidanlığı can also be found in Demirci Höyük (Ware H: Seeher 1987: Tafel.25;13-25 ; Tafel.26;1-16) but from unstratified contexts. Parallels to Orman Fidanlığı VII pottery were also found during the excavations of Küllüoba in the province of Eskisehir (Efe 2000:175).

To sum up, on the basis of Büyük Güllücek, İkiztepe II and Orman Fidanlığı pottery, horned handles seem to be the only possible link to the Balkans. Horned handles are a characteristic feature for Karanovo III and III-IV cultures in Bulgaria. However, most of Büyük Güllücek, İkiztepe II and Orman Fidanlığı pottery shows close similarities to materials from the Aegean Islands as well as Beşiktepe-Kumtepe Ia culture in Western Anatolia.

V.B.2. Chalcolithic

Until our investigations, the Chalcolithic period of Turkish Thrace was largely terra incognita. Our investigations in the Edirne region made have much headway in filling the substantial gaps existing in the Chalcolithic period of Turkish Thrace. During the Chalcolithic period, there was evidently a marked decrease in the number of settlements compared with the preceding Neolithic period (Özdoğan 1998a; Erdoğan 1997).

The Early Stage of The Chalcolithic Period: The first stage of the Chalcolithic period is represented by the Kocatepe culture, after the most prolific site of this period (Erdoğan 1997; Özdoğan 1998a). As I mentioned above, Kocatepe pottery contains some elements of the Maritsa culture in Bulgaria and the Pre-Cucuteni culture in Romania and Moldavia, thus I prefer to use the term "Pre-Cucuteni / Maritsa (= Kocatepe)". The Kocatepe culture is characterized by an abrupt change in settlement pattern. The settlements occupied during the Neolithic were not settled during the Chalcolithic period. It seems there is no direct continuation of the preceding Kalojanovec culture. Until now 10 Kocatepe settlements have been discovered, and all are located in the Upper Ergene basin, close to the Istranca Mountains (Erdoğan 1997; Harmankaya et al. 1998). There is, as yet, no excavated Chalcolithic site in Turkish Thrace. However, recent surveys in the Maritsa basin, Southeast Bulgaria have revealed new Kocatepe settlements, and two of them - Luda Reka and Dervishov Odzhak in the Harmanli region - were excavated (Leshtakov 1997). I believe that these excavations are important for explaining the Early Chalcolithic development in Turkish Thrace. Luda Reka and Dervishov Odzhak are flat settlements. A small-scale excavation in Luda Reka suggests a single phase of Chalcolithic habitation (Leshtakov 1997: 57). The layer is black in colour. Its thickness varies between 0.75 to 0.30 m, and contains a burnt house and a pit. A richly decorated high-pedestalled foot was found at the bottom of the pit.

Excavations in Dervishov Odzhak have revealed two occupational layers - "Black" and "White". No architectural structures except from a pit were found in the "Black" layer. The "White" layer contains a remains of burnt house and a shallow pit (Leshtakov 1997: 77-79). Both sites in the Harmanli region show exact similarities to Kocatepe material in Eastern Thrace. On the other hand, "S" - and tulip-shaped bowls from sites in the Harmanli region can be compared to the Maritsa culture in Bulgaria (cf. Dervishov Odzhak: Leshtakov 1997: Fig.17;1-5 and Dustubaka: Leshtakov 1997: Fig.41;1-3 ; Fig. 42;2-7). On the basis of the Luda Reka and Dervishov Odzhak excavations, we assume that the Early Chalcolithic settlements in Turkish Thrace have one or two occupational layers, and architecture consists of wattle-and-daub houses and pits. Some similarities and differences exist between Kocatepe pottery and the neighbouring Maritsa pottery.

The Early Chalcolithic in Southeast Bulgaria is represented by the Maritsa culture. The term "Maritsa culture" was first used by J. Gaul after the decorated pottery found in the valley of the Maritsa (Meriç) river, especially at the settlement of Deve Bargan (Gaul 1948:72-73). After excavations at tell Karanovo, the Early Chalcolithic culture got the name Karanovo V (Georgiev 1961). Later, Todorova argued that the Early Chalcolithic in Thrace is divided in three phases and is represented by the Maritsa I-III culture (Todorova 1978). The period is not represented in tell Karanovo itself, where the fifth layer corresponds to the Maritsa IV phase attributed to the Middle Chalcolithic (Todorova 1995). The Maritsa culture is known mainly from its tells, for no flat settlements have been found. The pottery of Maritsa I is characterized by conical and hemispherical open bowls, "S" - and tulip-shaped bowls, high necked jar, lids and zoomorphic boxes. Incised decoration with ladder design with white encrusted and angular meanders or spirals are common elements. Graphite painting occurs seldom (Todorova 1978: 29; Leshtakov 1997:128). Maritsa II-III phases are characterized by the production of hollow high-pedestalled vessels and of high lids, new type of storage and biconical vessels (Todorova 1986: Fig.23). In Maritsa III, tall pedestalled vessels were also found (Bojadjiev et al. 1993: Pl.9;10 ; Todorova 1986: Fig.23;9). Incised decoration decreased and graphite decoration increased (Todorova 1978: 29; Leshtakov 1997:128). The Maritsa culture can be dated to ca. 4900/4850 - 4600/4550 cal. BC (Boyadziev 1995). In Paradimi in Greek Thrace, material comparable with the Maritsa culture comes from layers 4 and 5, Phase IV (Bakalakis and Sakellariou 1981: 11,27). The Maritsa type of incised and graphite painted decorations were found in Paradimi (Bakalakis and Sakellariou 1981: Taf.58; Taf.V ; Taf.VI). Paradimi IV should be contemporary with Sitagroi III and Dikili Tash II in Greek Macedonia. As yet there is no Kocatepe type of pottery found in Greek Thrace.

Although the typical dark coloured ware of Kocatepe exists in the Maritsa group, a characteristic form - the high-pedestalled foot - of Kocatepe is absent in the Maritsa Culture (Leshtakov 1997: 136). In addition, some other forms, such as the straight-sided dish, evenly cut at the rim, and decorations such as combinations of dots with straight, wavy lines and chevrons do not have any parallels in the Maritsa culture. Pedestalled vessels of Maritsa III may be compared in a general sense with Kocatepe pedestalled-feet. The closest parallels for Kocatepe large deep bowls with "S" profiles may be found in the Maritsa Culture (Bojadjiev et al. 1993: Pl.8;6 ; Pl.9;3 ; Todorova 1986: Fig.23;3). Only a little graphite painted pottery was found in Kocatepe settlements of the Harmanli region (Leshtakov 1997: Fig.33), and there are no graphite painted sherds found in the Kocatepe settlements of Turkish Thrace. Only a handful of typical Maritsa pottery was recorded at Kocatepe settlements in the Edirne region. This development is similar to the Sava culture

in the Black Sea littoral of Bulgaria. The Sava culture was divided into five phases¹⁴. The graphite painted decoration is very rare. However, most of the pottery was decorated by incised parallel lines, chevrons and spirals. A chessboard design is very characteristic. In phase II deep bowls decorated with channelling began to appear. Narrow-necked-jars with globular body with high lids, lily-shaped bowls, short-pedestalled bowls and cone-shaped dishes are common forms (Todorova 1978: 39; Mirtchev 1960). The similarities between the Sava culture and the Kocatepe culture are apparent in the types of decoration (e.g. Mirtchev 1960: Fig. 18 ; Todorova 1986: Fig.37-38). Again, pedestalled vessels of Sava (e.g. Mirtchev 1960: Fig.22 ; Parzinger 1993: Taf. 78;9) may be compared in a general sense with Kocatepe pedestalled-foots.

Kocatepe pottery shows also some similarities to the Pre-Cucuteni-Tripolye A pottery of Romania, Moldavia and Ukraine. After the discovery of the site of Cucuteni in Moldavia in the early 20th century, similar finds have commonly been referred to as the "Cucuteni" culture (Ellis 1984). Russian and Ukrainian scholars preferred to use the term "Tripolye culture" instead of Cucuteni, after the excavations in the most prolific site near Kiev (Zbenovich 1989; 1996). The recognition of an archaeological assemblage antecedent to and connected with the genesis of the Cucuteni culture, and named the "Pre-Cucuteni" culture, was first described by R. Vulpe in 1937 from his excavations at Izvoare (Ellis 1984). The Pre-Cucuteni culture has been divided into three phases, designated as Pre-Cucuteni I, II and III (Marinescu-Bâlcu 1974). Pre-Cucuteni settlements were found on low, middle and high river terraces, as well as in valleys, depressions, and river islands (Marinescu-Bâlcu 1974). During all three phases, three types of ware, ranging from a finely decorated to a coarse utilitarian ware have been identified. The forms of Pre-Cucuteni pottery are tall-necked vessels, flaring-sided bowls, everted rim bowls, pedestalled vessels, biconical vessels and lids etc. During Pre-Cucuteni II, piriform vases with tall necks and pedestalled bowls appear (Ellis 1984). Decoration in the first phase includes channelling and incised. Channelling was placed horizontally. Incised decoration consists of parallel horizontal lines. Vertical lines were arranged in "ladder" design. Rectangular chips of clay were cut and arranged in a chessboard pattern, and triangular chips of clay were also cut and arranged "wolf's teeth" pattern. Excised or reserved bands in angular or spiral design, and nail impression also occur (Ellis 1984; Marinescu-Bâlcu 1974; Zbenovich 1989). Phases II and III are characterized by complicated designs of spirals and geometric lines. Channelling is not only placed horizontally but also obliquely and in circular fashion. Ladder and chessboard designs are still common (Ellis 1984; Marinescu-Bâlcu 1974). In Phase II wedge-like excisions, set directly behind one other,

¹⁴ The division into five phases of the Sava culture was criticised by Dr. P. Hasotti. According to him, this division is over-elaborate (personal communication, J. Chapman).

began to appear. The Pre-Cucuteni culture can be dated to ca 5050-4600 cal. BC (Mantu 1998:183).

In the Pre-Cucuteni I-II phases parallels exist for dark and red wares from Kocatepe. As at Kocatepe, some sherds seem to have been deliberately tempered with mica. The wares also shows good parallels in the decoration techniques, such as impressed, incised and excised, and designs, such as wavy lines, dot and chevron, "ladder" and chessboard designs. The execution especially seems identical (Marinescu-Bâlcu 1974: Fig.52;9 ; Fig. 41;14 ; Marinescu-Bâlcu 1981: Fig.85:2 ; Zbenovich 1989: Fig.63;8 ; Fig.66;2). On the other hand, the wedge-like excisions and "wolf's teeth" pattern attested at Pre-Cucuteni are absent at Kocatepe, and large dot impressions attested at Kocatepe are absent in Pre-Cucuteni. There are also some differences in design arrangements between two cultures. For example, in Kocatepe sometimes decoration appears in metopes, but no such metopes exist in Pre-Cucuteni. The most important difference between Kocatepe and Pre-Cucuteni cultures is the range of vessel forms. The pedestalled vessels of Pre-Cucuteni (e.g. Marinescu-Bâlcu 1974: Fig. 41;3 ; Fig. 60;1) may be compared in a general sense only with Kocatepe pedestalled-feet. The only Pre-Cucuteni finds similar to Kocatepe pedestalled-foot are known from Târpești (Marinescu-Bâlcu 1974: Fig.59;3). Kocatepe large deep bowls with "S" profile may also be compared in a general sense with the Pre-Cucuteni culture (Marinescu-Bâlcu 1974: Fig. 28; 5 ; Fig.55;2,4).

To sum up, I would say that the Kocatepe culture, which represents the first stage of the Chalcolithic in Turkish Thrace, is a local variant similar to the Maritsa and Pre-Cucuteni cultures. The dark coloured ware of Kocatepe is similar to Maritsa. However, there is no abundant use of mica in Maritsa sherds. Kocatepe pottery is coarser than that of Maritsa pottery, which is more elaborately made. The most characteristic shape of the Kocatepe culture - the high-pedestalled foot- is absent in the Maritsa culture. Only a few typical Maritsa sherds were found in Kocatepe settlements. No graphite painted sherds are known from Kocatepe settlements. This development is similar to the Sava culture in the Black Sea littoral. However, similarities are apparent in the types of decoration. On the other hand, the decorative techniques of Kocatepe pottery can be found in a large geographic area during the Early Chalcolithic period (viz. the Maritsa, Sava, Gradeshnitsa, Polyanitsa cultures in Bulgaria and Pre-Cucuteni, Boian and Vadastra cultures in Romania and Moldavia). Excellent parallels for the dark and red wares from Kocatepe exist in Pre-Cucuteni I-II. Most of designs are also similar. However, the forms are different between two cultures. From my first-hand investigation of both Pre-Cucuteni and Maritsa material, I would argue that there are many more similarities between Kocatepe and Pre-Cucuteni than between Kocatepe and Maritsa. In addition, a typical Pre-Cucuteni / Tripolye A sherd was found at Drama, Southeast Bulgaria (Lichardus et al. 2000 Abb.62), and another at Burgaz on the Black Sea Littoral of Bulgaria (personal communication, D. Monah). Most

of Kocatepe pottery is clumsy - reminiscent of Boian pottery. However, the ware and forms are quite different.

In Central Anatolia, Gelveri-type of pottery can be compared to pottery from the Balkan Early Chalcolithic cultures, such as Maritsa, Pre-Cucuteni and Boian etc. Gelveri / Güzelyurt is located ca. 40 km Southeast of Aksaray and 1.5 km West of Güzelyurt, at the Easternmost corner of the plateau between Niğde and Nevşehir (Fig.V.6). It is a slope settlement, partly destroyed by a 19th century church. In 1958, a whole vessel, stored in the Ankara Museum was published by Tezcan (1958), and scholars working in Central Anatolia for a long time sought the site from which this vessel came. In the 1980s, the site of Gelveri was found by architects from Yildiz University, and archaeologists demonstrated that the vessel stored in the Ankara Museum came from Gelveri. Later, two other whole vessels, stored in Istanbul Museum were published by Esin (1993). If these vessels do not come from Gelveri it is possible that another similar site exists. In 1990, U. Esin made small soundings at Gelveri (1993: Abb.4;10-11). Sounding B (5x2 m) has revealed at least 3 architectural layers of 1.5-2 m thick. It was stopped before reaching bedrock. Esin suggested that houses are wattle-and-daub hut-like structures, supported by stones at the base (Esin 1993; Harmankaya et al. 1998). All Gelveri pottery is handmade. The clay contains sand, mica and grit inclusions. Black-grey or dark brown burnished ware is dominant (Esin 1993). Most of the sherds belonging to this type are decorated. Red slipped ware, coarse and semi-coarse wares also occur. Coarse and semi-coarse wares are beige or light brown in colour, and their surfaces are smoothed only (Harmankaya et al. 1998). They contain varying amounts of organic matter. "S" - shaped bowls are very characteristic forms. Necked jars also occur (Özdoğan 1996a). Decoration is common, and generally applied on bowls. There are mainly three types of decoration techniques - grooving, incised lines with dot impressions and wedge-like excisions, often set directly behind one other (Esin 1993; Özdoğan 1996a). Designs generally consist of spirals or curvilinear patterns (Fig.V.7:9-10). The chipped stone industry consists mainly of obsidian, indicating a blade industry (Harmankaya et al. 1998). Only one zoomorphic figurine and one pseudo stamp seal was found (Harmankaya et al. 1998).

Esin (1993), Özdoğan (1996a) and Makkay (1993) suggest that comparable material for Gelveri pottery comes from the Balkans: Maritsa, Pre-Cucuteni, Vinča and Boian pottery. The closest parallels for Gelveri "S" - shaped bowls are known from the Maritsa culture in Bulgaria (Leshtakov 1997: Fig. 15 ; Fig. 16:2-7 ; Fol et al. 1989: Taf.7). Executions of spiral designs on bowls are also similar but not identical (e.g. Todorova 1978: pl.I;5 ; Leshtakov 1997: Fig.15 ; Renfrew et al. 1986: Fig.12.11;5). Decorative techniques, such as grooving, incised lines with dot impressions and wedge-like excisions can be compared to the Pre-Cucuteni, Boian and Sava cultures, sites such as Giulești (Comșa 1974: Pl.15;14 ; Pl.9;6 ; Pl.16;13), Rast (Dumitrescu 1980: Pl. XXXIX;14),

Târpești (Marinescu-Bâlcu 1974: Fig. 42;6 ; 1981: Fig. 59;10 ; Fig. 58;4,7,9 ; Fig. 64;23 ; Fig. 73;12), Izvoare (Marinescu-Bâlcu 1974: Fig.53;11) and Sava (Todorova 1978: Pl. VI:4). I agree with Özdoğan that none of the Balkan Early Chalcolithic cultures are exactly identical to Gelveri, but bear general similarities (Özdoğan 1996a:192).

In Central Anatolia, Gelveri-type of pottery has also been found at Alişar. Alişar is located ca. 50 km Southeast of Yozgat and more than 100 km North-East of Gelveri (Fig.V.6). It was excavated by H. von der Osten between 1927 and 1932. Later, a small-scale excavation was directed by L. Gorny in 1993-1994. Layers 19M to 12M on the Alişar tell were dated to the Chalcolithic period (von der Osten 1937). Later, these layers were dated to the Early Bronze Age I by Orthmann (1963). On the basis of new excavations at Alişar as well as Çadır near Alişar, the early layers of Alişar were re-dated to the Middle (19-15M) and Late Chalcolithic (14-12M) period by Gorny (Gorny et al. 2000; Steadman 1995:25). According to Özdoğan, the early layers of Alişar also contain Late Neolithic sherds (Özdoğan 1991:220). All Gelveri-type of sherds are coming most probably from layers 19-15M at Alişar (Steadman 1995:26 ; Gorny 1995). All pottery is handmade, and it has been sorted out into 4 ware groups; wet-smoothed ware with mica temper, greyish-buff slipped ware, black slipped ware and red slipped ware. Rounded dishes and high-pedestalled vessels are common forms. Various decorative techniques have been employed, such as incised, impressed and wedge-like excised. Curvilinear design made by wedge-like excisions similar to Gelveri was also found at Alişar (Gorny et al.1995: Fig.10a and 10b). As Gelveri, this technique is applied also on bowls. Most of the designs are geometric (von der Osten 1937: Fig.65). Regular chips of clay were cut and arranged in a noteworthy chessboard pattern (von der Osten 1937: Fig.65;11,28,31). Some geometric designs continue into the Late Chalcolithic 14-12M. A brownish red on buff slip painted sherd in swirling design was found in Alişar (von der Osten 1937: Fig.64;3), and a number of similar painted sherds were found at Yeniyapan, ca. 80 km West of Ankara (Omura et al. 1992). Gorny believes that these sherds are a painted version of the Gelveri pottery (Gorny 1995). Wedge-like excised decoration can be compared with the Balkans Sava, Pre-Cucuteni and Boian cultures. High-pedestalled vessels from Alişar may be compared in a general sense with Pre-Cucuteni examples (e.g. Marinescu-Bâlcu 1974: Fig.59;1). Chessboard designs, occurring on high-pedestalled vessels of Pre-Cucuteni is almost identical with Alişar (e.g. Marinescu-Bâlcu 1974: Fig.52;12). Similar chessboard pattern was also found in the Boian, Sava and Kocatepe cultures (Mirtchev 1960: Fig.18 ; Comsa 1974: Pl.9;6). However, chessboard pattern and other geometric designs are absent at Gelveri.

In the Northern part of Central Anatolia the early Yarikkaya pottery (layers 5 and 4) was dated to Alişar 19-15M (Hauptmann 1969: 69). Yarikkaya is located Southwest of Çorum, ca. 1.5 km Northeast of Boğazköy (Fig.V.6). The common ware is coarse, interior

black, exterior red slipped and burnished. Ranges of shapes consist of straight-sided dishes or deep bowls, rounded bowls, carinated bowls etc. Incised decoration with lozenges, straight or curved lines can be seen. The Yarikkaya pottery is different than the Gelveri. However, both materials should be contemporary.

The Gelveri type of curvilinear patterns of incised lines with dot impressions was also found at Kabakulak (Fig.V.6), ca. 60 km North of Gelveri and ca. 5-6 km East of the Salt Lake (Summers 1991: Fig.3;4-6). Typical Büyük Güllücek pottery was also found at Kabakulak (Summers 1991: Fig.3;1-3). With the exception of these three sites - Gelveri, Alishar and Kabakulak - no other site or similar material of Gelveri was found in Anatolia. On the other hand, an assemblage with very similar forms and decoration was found at Demirci Höyük North-Western Anatolia (Ware E: Seeher 1987: Tafel. 22;11,26,27), but all examples are from unstratified contexts. One sherd of Gelveri type has also been found in Tekkepinar (Fig.V.6), East of lake Akşehir in Central-West Anatolia (Özsait 2001: Fig.2;34).

During the later stage of the Chalcolithic period in Turkish Thrace, there was a decrease in the number of the settlements. Only 7 sites were discovered in the upper Ergene basin, and are relatively small. Only one site has been excavated - Tilkiburnu. Tilkiburnu is located ca. 18 km South of the town of Kırklareli, on the East bank of the Şeytan Stream. Özdoğan undertook a small-scale excavation in 1981 (Özdoğan 1982b). Tilkiburnu is a flat settlement covering an area of ca. 180x130 m. It has been destroyed by a large trench dug for quarrying of sand and by a gun-post. The destruction trench was dug down to virgin soil, exposing a profile. In profile, 4 large pits, probably dug into a 50-80 cm occupational layer were found. In some parts of this layer, mud or pisé and wall plasters were recognised. However, only pits were excavated. Pit A in the Western part of the profile is noteworthy. 12 whole or almost whole vessels were found inside the pit (Özdoğan 1982b: 5). Two of them were inverted rim bowls with black or grey-black burnished surfaces (Özdoğan 1982b: Fig.6;2,3). A tall-necked jar with a globular form has also a black burnished surface (Özdoğan 1982b: Fig.6;13). Most of the vessels in pit A are rounded bowls with flat base, convex sides and bead rim (Özdoğan 1982b: Fig.6;4-8). One of them has projections at the rim (Özdoğan 1982b: Fig.6;4). Most of them are confined to red unburnished ware. One rounded bowl was decorated by grooved oblique lines (Özdoğan 1982b: Fig.6;7), and another by band in relief (Özdoğan 1982b: Fig.6;8). There also vessels with perforations (Özdoğan 1982b: Fig.6;10,11). Özdoğan argues that the pottery from Tilkiburnu bears some similarities to the Gumelnița-Karanovo VI culture of the Balkans and dates Tilkiburnu to a transitional period between the Chalcolithic and the Early Bronze Age (Özdoğan 1999a: 10). However, some characteristic features of the Gumelnița-Karanovo VI culture are absent in Tilkiburnu (Özdoğan 1982b).

The Late stage of the Chalcolithic period: During the Late Chalcolithic period, Karanovo VI pottery is known from Southeast Bulgaria. In North-East of Bulgaria, this culture is known as the Kodjadermen and in Romania Gumelnița (Todorova 1986). The Kodjadermen-Gumelnița-Karanovo VI culture has been divided into three phases. The first phase is also subdivided into two (Todorova 1978). In the first phase, large bicylindrical bowls and jars are common, decorated in their upper part with three horizontal bands of graphite painted. The graphite decoration was done in horizontal bands of zigzags, negative triangles and lozenges and diagonally running compositions with connect semicircles etc. (Todorova 1986). In general, decoration covered only the shoulders of vessels, and sometimes the interior of shallow dishes. The neck and mouth were occasionally painted red on the inside. Incised, barbotine, finger impressed bands and applied relief bands also occur in the first phase (Todorova 1986). In the second phase biconical vessels marked by a pronounced ripple between the upper and the lower part of the vessels, decorated with negative graphite decoration occur most frequently (Todorova 1986). The graphite paint was done in spirals, half-moons and tangents inside and on the upper part of the vessels. Phase three is marked by decrease in the number of graphite painted vessels (Todorova 1986). Nail- and shell-impressions and false-corded decorations become most widely spread. Graphite painted and barbotine decorations appear on the same vessels. At the first time vessels have inverted and thickened rims (Todorova 1986). The Kodjadermen-Gumelnița -Karanovo VI culture can be dated to ca.4500/4400-4100/3800 cal. BC (Boyadziev 1995).

Todorova's three phases of the Kodjadermen-Gumelnița -Karanovo VI culture was criticised by Lichardus et al. (Lichardus et al. 2000). A two-phase system of the Kodjadermen-Gumelnița -Karanovo VI culture has been suggested on the basis of Drama excavations in Southeast Bulgaria (Fol et al. 1989: 92-94). On the basis of surface finds in Turkish Thrace, I would argue that a two-phase system of KGK VI culture is much more sensible.

The Kanligeçit excavations, near the town of Kırklareli have revealed typical Kocatepe pottery together with some sherds resembling Karanovo VI- Gumelnița pottery. Most of the Karanovo VI-Gumelnița pottery of Kanligeçit has not been recovered from any other sites in Turkish Thrace. Fine black burnished ware, red mottled ware with stroke-burnish decoration, medium fine light grey coloured unburnished ware and red slipped burnished ware are characteristic ware types. Incurved rim bowls are a common shape. All Kanligeçit pottery comes from pit. Kocatepe pottery and some Karanovo VI have been found together in these pits, and Karanovo VI pottery of Kanligeçit has not been found in any site in Turkish Thrace. I believe that these pits can be dated to the very end of the Maritsa culture. Thus, Kanligeçit may be dated to the end of the Maritsa culture and the beginning of the Karanovo VI-Gumelnița culture. Özdoğan believes that there are no late

Chalcolithic settlements exist in Turkish Thrace, only cultural remains deposited in pits (Özdoğan 1998a). However, our investigations in the Edirne region proved that this idea is incorrect. During our survey in the Edirne region, four late Chalcolithic settlements were found - Kavakli 1, Yumurta Tepe, Karabaş and Tepeyani. A careful typological analysis of the pottery from these settlements shows chronologically two different phases. It seems the Karabaş pottery is earlier than others. The Karabaş pottery is finer than that of Yumurta Tepe and Kavakli. Some of the pottery shows remarkable similarities to the Drama Karanovo VI pottery (e.g. Lichardus et al. 2000: Abb.25;6,8,11 ; Fol et al. 1989: Taf.6;1). Some fine sherds were also found at Tepeyani.

Nearly all the parallels for Yumurta Tepe and Kavakli I as well as some Tepeyani pottery point to the second, third and fourth phases of the Krivodol-Salcuța-Bubanj culture and the last phase of the Gumelnița-Karanovo VI culture of the Balkans (Georgieva 1990; Todorova 1978). The similarities are especially apparent in types of decoration, but also to some extent in the repertoire of shapes.

The Krivodol-Salcuța-Bubanj culture is widely spread in certain parts of the regions of Northwestern Bulgaria, Oltenia in Romania and the Morava basin at Serbia (Georgieva 1990; Berciu 1961; Tasić 1995). Settlements are mainly located at high altitudes, protected by the river course and steep slopes, or in caves (Todorova 1995; Tasić 1995). The Krivodol-Salcuța-Bubanj culture has been divided into four phases. The first phase is known from Djakovo, near Kustendil. Most of the pottery bears rich graphite painting. Especially, inner parts of dishes were decorated by rich graphite decoration (Georgieva 1990: Fig. I;8). However, the negative graphite patterns typical of the Gumelnița-Karanovo VI culture are not found. Necked jars generally with handles springing from neck and rims of vessels and straight-sided dishes with internally thickened rim are common forms of this phase (Georgieva 1990: Fig.I;4,12). The second phase is known from Salcuța I and the Devataki cave. Most frequent is the decoration with graphite paint. A new technique of decoration also appears - the border of the design is marked by slightly incised lines and their inner parts are filled in with short unorganised lines made by a hard brush (Georgieva 1990: Fig. I;6). Shouldered bowls with handles are characteristic forms (Georgieva 1990: Fig.I;1-2). The third phase is known from Zaminec and Krivodol. Characteristic for this phase is the tendency for roughness of the pottery. Graphite painted ware decreased. Barbotine decoration began to appear. Bowls and jars have a rounded ridge in contrast to the previous phase. The fourth phase is known from Krivodol, Galatin. Salcuța II and Bubanj Hum Ia. This phase is marked by a decrease in graphite painting. The pottery surfaces include coarse, so called "steppe elements" (Tasić 1995: 35). Barbotine and nail and shell-impressed decorations, necked jars with globular body, carinated bowls with knob-like handles, necked jars with carination body with handles

springing from neck and rims of vessels are common elements of this phase (Berciu 1961: Fig. 105;4,5 ; Georgieva 1990: Fig. II;1,2,5,9,11;).

Nail and stroke impressions from Yumurta Tepe can compare with material from the sites of Salcuța I-II (Berciu 1961: Fig.88;8 , Fig.105;4,5), Glatin (Georgieva 1988: Abb.13;4), Krivodol (Mikov 1948: Fig. 21;top row), Karanovo VI (Hiller and Nikolov 1997: Tafel 137;1-12, Tafel 139;13-23). Similar examples to the shell-impressed sherds of Yumurta Tepe can be found at sites such as Salcuța I (Berciu 1961: Fig.88;5), Karanovo VI (Hiller and Nikolov 1997: Tafel 137;4,7,8,12, Tafel 139;17 and Georgiev 1961: Tafel XX;7), and Kodjadermen (Todorova 1986: Fig.34;10). Cord-decorated sherds of Yumurta Tepe show remarkable similarities to cord-decorated sherds from Gorna Kremena (Bognar 1975: Fig.23;25). On the other hand, only a few graphite painted sherds were found in Late Chalcolithic settlements of Turkish Thrace.

Late Chalcolithic forms in Turkish Thrace can also be found some similarities to the Late Chalcolithic sites especially in Southeast Bulgaria (e.g. Yunatsite: Todorova and Matsanova 2000: Tab.26.1 forms;AIV 1,2 and 3 ; Tab.26.2 forms;AV 1,2,3 and 4 ; Tab.26.3 forms;AVII 1 , AVIII 1,2 ; Tab.26.4 forms;BII 1 , BIII 2 ; Tab.26.5 forms;BIV 1 ; Tab.26.7 forms;EIV 1 , EVII 2 ; Karanovo VI: Hiller and Nikolov 1997: Tafel.128;11-30 ; Tafel. 130;1-29 ; Tafel. 131;2,3,21 ; Tafel. 132;17 ; Tafel. 133;1,17 ; Tafel.136;9).

Comparable material for Yumurta Tepe and Kavakli I come from Tilki burnu in Turkish Thrace. Almost all ware types are present at Tilki burnu (Özdoğan 1982b:6,7). However the nail, stroke and shell-impressed decorations attested at Yumurta Tepe and Kavakli I are absent at Tilki burnu. Dates of Tilki burnu should not be too distant from Yumurta Tepe and Kavakli I.

I would say that as well as some pottery similarities between Turkish Thrace settlements and the Kodjadermen- Gumelnița - Karanovo VI culture and also the Krivodol- Salcuța -Bubanj culture, pottery from Turkish Thrace settlements is relatively unsophisticated. In addition, decoration is not common and graphite painted decoration is not a characteristic decoration for Turkish Thrace settlements. It seems likely that the pottery from Turkish Thrace was the product of local development with closely related to the Kodjadermen- Gumelnița - Karanovo VI and the Krivodol- Salcuța -Bubanj cultures.

In the Southern part of Turkish Thrace, only one late Chalcolithic site can be identified - Yartarla. Yartarla is located ca. 14 km Northwest of Sarköy, ca. 3 km Northeast of the village of Sofuköy. It is situated on a high terrace of the Kavak Stream. It is characterized by grey and reddish brown wares with the abundant use of sand temper. The rounded bowl is a very common shape. Straight-sided bowls and necked jars are also attested. No Yartarla pottery has been found in other sites of Turkish Thrace. Some Yartarla shapes look similar to Beşiktepe Ib. However, similarities are not exact.

In the Gelibolu Peninsula, a number of sites have revealed Kumtepe Ib pottery (Özdoğan 1986a). Until recently, Kumtepe Ib was dated to the late Chalcolithic period. New excavations show that Kumtepe Ib can be dated to the Early Bronze Age I (Korfmann et al. 1995). However, the early sub-phases of much of Kumtepe Ib may be dated to the late Chalcolithic period. The excavations in Karaağaçtepe in 1921-23 yielded Kumtepe Ib material (Demangel 1926; Özdoğan 1986a). Karaağaçtepe is located to the South of the Gelibolu Peninsula, ca 3 km North-East of Seddülbahir, 1 km inland from Mordo Bay. The earliest layer (P1) at Karaağaçtepe was dated to Kumtepe Ib (Özdoğan 1986a). Some pottery in this early layer must be dated to the late Chalcolithic period.

To sum up, the Late Chalcolithic period of Turkish Thrace is marked by a decrease in the number of settlements. In the Balkans, this period is marked by large settlements with developed plan and cemeteries with rich grave goods, notably copper and gold. By contrast, in Turkish Thrace, Late Chalcolithic settlements are small and low relative to those of other Chalcolithic Cultures in the Balkans. Without systematic excavations and detailed geomorphological researches, it is difficult to explain what was happening in Turkish Thrace at this period. However, a number of explanations will be outlined in the next Chapter.

During the Late Chalcolithic period, similarities are especially apparent in the metal finds and figurines, also to some extent in the repertoire of shapes between the Balkans and the Black Sea littoral of Anatolia. In the Black Sea littoral of Anatolia, sites such as Dündartepe and İkiztepe are noteworthy. Dündartepe is a tell to the Southeast of Samsun. The Samsun-Sivas railway cuts through the tell. It is 220 x 200 m in size and 15 m high. It was excavated in 1940-41. The Late Chalcolithic levels were excavated both on the summit of Dündartepe (area B) and on the slope (Kökten et al. 1945; Lamb 1949). Although the finds from these two areas were recognised as different from each other, Thissen argues that material from both areas was more or less contemporary (Thissen 1993). Area B on the Dündartepe summit has been excavated to a depth of 3.80 m (Kökten et al. 1945:369-375). Three building levels are reported. Houses were built in the wattle-and-daub technique. The pottery of Late Chalcolithic Dündartepe was investigated by Thissen in detail (Thissen 1993). According to him several groups can be distinguished. Among them black burnished ware, sometimes with white painted decoration is noteworthy. Colours are contrasting; black for the exterior, red for the interior. White paint consists of thin and straight lines, and is applied on exterior surfaces only. The ranges of shapes are round-sided bowls, whole-mouth pots with horizontally or vertically placed handles and necked jars. Several of bowls are fitted with rudimentary knobs. Carinated bowls with inverted rim and incised or grooved decoration is also specific. These bowls are black or dark brown in colour, and only their exterior sides were burnished. Decoration is rectilinear, in sharp incised or grooved lines, located on the exterior, both on the shoulder

and below the carination. Motifs are variations on simple geometric patterns, such as horizontal V-shaped creating fish-bones, upturned V's or zig-zags (Thissen 1993: Fig.2;1-6; Fig.3;1-7). According to Thissen, carinated, grooved bowls of Dündartepe have conceptual parallels in the Late Chalcolithic period of Bulgaria (Thissen 1993:217). Similar form can be found at sites, such as Vinica (Radunčeva 1976: Pl.23;3,4) and Karanovo VI (Hiller and Nikolov: 1997 Taf. 129;8,15 ; Taf. 131;13-15). However, exact parallels cannot be found. In addition, the characteristic forms and decoration of the Late Chalcolithic of Bulgaria, such as graphite-painted decoration and extravagantly angled bowls, lids etc. are absent at Dündartepe (Thissen 1993:218). In Dündartepe, a flat axe with wide cutting edge, a pin, a wedge and daggers from copper were found (Kökten et al. 1945: Pl.LXVI:1-3). Such metal finds have excellent parallels in the Late Chalcolithic period in Bulgaria (e.g. Todorova 1978: Pl.5-7; Černych 1978a: Taf.10;6,10,11 ; Taf.11;11,13-16 ; Taf.12;3,7,10,12,13 ; Taf. 29;17,8). A decorated figurine from Dündartepe (Kökten et al. 1945: Pl.LXVI;6 ; Lamb 1947 Fig.iii.2) show remarkable similarities to decorated female figurines from the Cucuteni Culture (Comşa 1995: Fig.88;4,5 ; Marinescu-Bâlcu 1974: Fig.109;4 ; Monah 1997: Fig. 52;1-12 ; Fig.56;1-7).

A similar assemblage to the Late Chalcolithic Dündartepe is present in soundings C and F in Ikiztepe I (Thissen 1993). Similar carinated bowls with incised decoration can be found Ikiztepe I, sounding F (Alkim et al. 1988: Pl. L;11). Similar white painted decoration on bowls and jars can also be found in soundings C and F (Alkim et al. 1988: Pl.XIII;6,8 ; Pl.XIX;6 ; Pl.XXI;3 ; Pl.XLIX;3,5,6 ; Pl.LI;3). According to Thissen who investigated both Dündartepe and Ikiztepe materials, Dündartepe-Summit and Ikiztepe I are contemporary (Thissen 1993)

Figurines found in soundings C and F are noteworthy (Alkim et al. 1988: Pl.LVI). Several female figurines with pierced ears and a high pointed bun at the back of the head show remarkable similarities to Vinča and Gumelnița -Karanovo VI figurines (e.g. Comşa 1995: Fig.23;3 ; Fig.24;1 ; Fig.26;2 ; Gaul 1948: Pl.LVI;2). A decorated female figurine (Alkim et al. 1988: Pl.CI;210) shows similarities female figurines from the Cucuteni and Gumelnița cultures (Comşa 1995: Fig.88;4,5 ; Monah 1997 Fig. 52;1-12 ; Fig.56;1-7 ; Gaul 1948 Pl. LVIII).

Ikiztepe I, Sounding F has also revealed copper pins with pyramidal shaped heads (Alkim et al. 1988: Pl.LVIII;5,6). The chipped stone industry consists of flint, quartz and obsidian. Among chipped stone tools, triangular shaped arrowheads from flint and quartz are noteworthy (Alkim et al. 1988: Pl.XLIII;1-6). Similar arrowheads were also found at Gumelnița -Karanovo VI settlements in the Balkans (cf. Drama: Lichardus et al. 2000: Taf.6;10 ; Madara: Gaul 1948: Pl.XXXII;6,7).

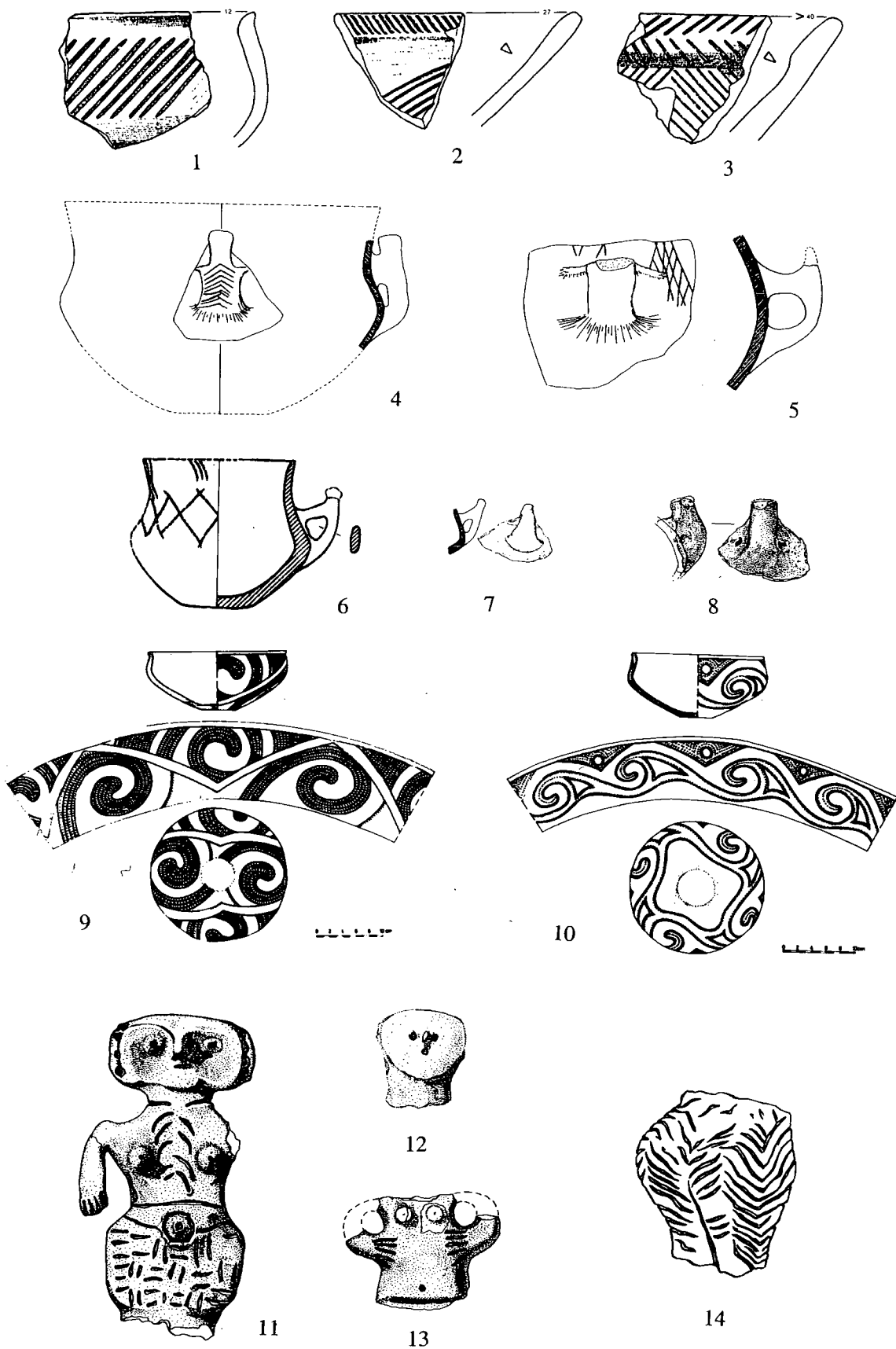


Fig.V.7. Comparative materials from Anatolia. 1-3. Ilipinar VB. 4-5. Büyük Güllücek. 6-7. İkiztepe II. 8. Yazır. 9-10. Gelveri. 11-13. İkiztepe I. 14. Düdartepe.

Recent excavations in İkiztepe tell III have revealed similar material to soundings C and F in İkiztepe I. There are as yet, no detail publications of İkiztepe III. However, pottery, figurines and metal objects are similar to İkiztepe I (Bilgi 2001: Fig. 25-41).

Material contemporary to Düdartepe can be found also in Kavak (Kaledoruğu) tell and Tekeköy cemetery (Thissen 1993; Lamb 1949: 193). The early layers of Kocagöz Höyük near Sinop should also be dated to the Late Chalcolithic period (Erzen 1956).

The connections between the Black Sea littoral and Central Anatolia in the Late Chalcolithic period are not strong. In Central Anatolia, Alişar 14-12M, Çadır and Alaca Höyük have a totally distinct pottery repertoire compared to the Late Chalcolithic from İkiztepe I and Düdartepe-Summit. For example, the characteristic high-pedestalled vessels or "fruit-stands" from Central Anatolia do not occur in the Black Sea zone. In addition, white painted pottery from the Black Sea does not occur in Central Anatolia. However, some graphite slipped sherds, probably similar to those of Karanovo VI were found at Alişar and Çadır (Gorny 1995; Gorny et al. 1995). At Alişar and İkiztepe, Balkan types of figurine were also found (von der Osten 1937: Fig.85;c506). The only similarities between Central Anatolia and the Balkans are some figurines of Alişar and the graphite painted pottery.

According to C14 dates from Çadır, Central Anatolia sites can be dated ca. 3750-3250 cal. BC (Gorny et al. 2000). The dating of Central Anatolian to the Late Chalcolithic period has been underlined through the finding of Central Anatolian "fruit-stands" in a solid Late Uruk context at Tepecik and Aslantepe in Eastern Turkey (Özdoğan 1996:191). On the other hand, a similar shape also occurs in the Balkans (cf. the Cucuteni culture: Ellis 1984: Fig.13 and Tizapolgár culture: Bognár-Kutzian 1963: Pl.CXXVIII).

V.C. CONCLUDING REMARKS

The Early Neolithic period in Turkish Thrace shows two different regional and cultural zones: 1. The Southern part of Turkish Thrace is characterized by the Western Anatolian Early Neolithic tradition. The Early Neolithic sites in this region, such as Hoca Çeşme, Hamaylitarla and Kaynarca, indicate that the Western Anatolian red slipped and burnished ware tradition extended in this area. 2. The Eastern part, as well as inner part of Turkish Thrace is characterized by the Fikirtepe culture. C14 dates of the early Fikirtepe culture and the early Hoca Çeşme indicates that both cultures are slightly earlier than the Karanovo I horizon of Bulgaria.

Karanovo III-Vesselinovo settlements were found in the Meriç and Ergene basins. The existence of Karanovo III material in Greek Thrace and Macedonia indicates that this culture extends over a large geographical area.

The Late Neolithic period of Turkish Thrace is marked by different cultural complexes. The Southern part is represented by the Toptepe culture. Toptepe elements extend to the Tunca basin. Karanovo III-IV (Early IV) pottery has been found in the Edirne and Kırklareli regions. The Karanovo III-IV culture contains Toptepe elements in Turkish Thrace. The Western part of Turkish Thrace is represented by the Maslidere Culture. Surface finds indicate that Maslidere material is close to Toptepe. No Maslidere and Toptepe pottery was found either in Bulgaria or Greece.

At the end of the Late Neolithic period, settlements belonging to the Çardakalti and Classic Kalojanovec were found in the Edirne region. No Çardakalti pottery was found in the Balkans and Anatolia. During this period, the Beşiktepe-Kumtepe Ia culture extended to the Gelibolu peninsula, and probably to the whole Southern part of Turkish Thrace.

The Büyük Güllücek group in Central Anatolia, the İkiztepe II group in the Black Sea Littoral and the Orman Fidanlığı group in North-Western Anatolia are more or less contemporary to each other. All groups share some similar features in pottery, such as horned handles and white painted decoration. However, the pottery indicates some regional differences; for example, some decoration techniques and designs of Büyük Güllücek and İkiztepe II are absent at Orman Fidanlığı. Büyük Güllücek and Alaca Höyük type of necked jars are absent at İkiztepe II as well as Orman Fidanlığı, and Orman Fidanlığı type of shallow dishes with sharply outturning rims are absent at Büyük Güllücek and İkiztepe II etc. On the other hand, there are more similarities in pottery between the Büyük Güllücek and the İkiztepe II groups than the Orman Fidanlığı group. Horned handles seem to form the most consistent link between the Balkans and Anatolia. Horned handles of Büyük Güllücek, İkiztepe II and Orman Fidanlığı groups show remarkable similarities to horned handles from the Karanovo III and III-IV cultures. However, characteristic forms and decoration of Karanovo III and III-IV are absent in these groups. Copper flat axes and a dagger from Büyük Güllücek have parallels in Bulgaria. However, the Bulgarian samples may be dated later than Büyük Güllücek samples. Comparable material for the Büyük Güllücek, İkiztepe II and Orman Fidanlığı pottery also comes from the Aegean islands and Western Anatolia. It seems that all these groups are related to the Beşiktepe-Kumtepe Ia culture in Western Anatolia. However, the characteristic pattern burnished decoration of the Beşiktepe-Kumtepe Ia is absent in the Orman Fidanlığı, İkiztepe II and Büyük Güllücek groups, and various designs attested at Büyük Güllücek are absent at the Beşiktepe-Kumtepe Ia.

Characteristic forms and decorations of the Karanovo III and III-IV cultures, such as horned handles and internally thickened rim dishes with channelling decoration were found in Ilipinar VB. Internally thickened rim dishes with channelling decoration of Ilipinar VB were not found in the Orman Fidanlığı, the İkiztepe II and the Büyük Güllücek groups. Ilipinar VB is dated to ca. 5500 - 5400 cal. BC, at the beginning of the Karanovo

III period in Bulgaria. Probably, Ilipinar VB is earlier than Büyük Güllücek, Ilipinar II and Orman Fidanlığı.

According to pottery evidence, Karanovo III-IV, Büyük Güllücek, İkiztepe II, Orman Fidanlığı and Beşiktepe-Kumtepe Ia should be more or less contemporary¹⁵. However, dates from Anatolian groups are later than the Karanovo III-IV culture. The Beşiktepe-Kumtepe Ia culture dates ca. 4900 / 4800-4500 / 4400 cal. BC and Karanovo III-IV dates 5200 - 4900 cal. BC. Dates from İkiztepe II show ca. 4400 / 4300 cal. BC. However, most of İkiztepe II dates are determined by the large errors. On the other hand, dates from Beşiktepe are respectful. According to C14 dates, Büyük Güllücek, İkiztepe and Orman Fidanlığı groups date the Maritsa culture (Table V.4).

The Chalcolithic period of Turkish Thrace is characterized by an abrupt change in the settlement pattern. The early stage of the Chalcolithic is represented by the Kocatepe culture. Until now, 10 Kocatepe settlements have been discovered in the Upper Ergene basin. The pottery evidence indicates that the Kocatepe culture is a local culture in Turkish Thrace with closely related to the Maritsa, Sava and Pre-Cucuteni cultures in the Balkans. This culture extended the Harmanli area of Southeast Bulgaria on its west side and the Vize-Saray plain on its East side. There are no Kocatepe settlements found in the lower Ergene basin.

The Gelveri Group in Central Anatolia still poses a problem in Anatolian archaeology. The Gelveri pottery shows similarities to the Pre-Cucuteni, Maritsa, Sava and Boian cultures of the Balkans. In Central Anatolia only three sites - Gelveri, Alişar and Kabakulak revealed Gelveri-type pottery. On the other hand, some decorative techniques in Alişar are different from those of Gelveri. There is no Gelveri pottery in the Northern part of Anatolia. However, a painted version of Gelveri pottery is said to occur at Yeniyapan in the Kirikkale region (Gorney 1995).

During the Late Chalcolithic period there must have been some contacts between the Balkans and the Black Sea Littoral of Anatolia. Similarities are especially apparent in the metal finds and figurines, also to some extent in the repertoire of shapes. The metal finds - flat axes and wedges - from Düdartepe have good parallels in the Gumelnița-Karanovo VI context. Figurines found in İkiztepe I sounding C and F, and the figurines from Düdartepe show good similarities to Vinča, Cucuteni and Karanovo VI figurines. It seems likely that the pottery from the Black Sea Littoral of Anatolia was the product of local development closely related to the Balkans. During the Late Chalcolithic period, Central Anatolia has a distinct pottery repertoire. The only similarities between the Balkans and Central Anatolia are graphite painted pottery and some figurines from Alişar.

¹⁵ "Contrary to common opinion, we can date İkiztepe II / EBA I, the earlier Chalcolithic material from Alaca Höyük and Büyük Güllücek towards the end of the fifth millennium BC contemporary with the Karanovo IV period, as well as contemporary with Samos Tigani (I), II- III, Emporio X-VIII etc." (Thissen 1993:220).

Central Anatolian Late Chalcolithic sites can be dated ca. 3750-3250 cal. BC. However, these dates match the Transitional Period in the Balkans.

The Late Chalcolithic period of Turkish Thrace is marked by a decrease in the number of the settlements. All known settlements are small and low relative to those of other Late Chalcolithic cultures in the Balkans. Surface finds from Turkish Thrace, belonging this period is unsophisticated. Most of the settlements belong to the end of the Late Chalcolithic period.

TableV.4. Cultural sequence of the Balkans, Anatolia and Turkish Thrace.

| The Balkans | Turkish Thrace | Anatolia | Cal. BC. |
|--------------------------------------|--|--|-----------|
| Karanovo III | Karanovo III | Ilipinar VB | 5500-5200 |
| Karanovo III-IV Kalojanovec | Karanovo III-IV Toptepe Maslidere Çardakalti | ? | 5200-4900 |
| Maritsa Sava Pre-Cucuteni | Kocatepe | <div> <div>Büyük Güllücek Orman Fidanlığı Ikiztepe II</div> <div> <div>Kumtepe Ia</div> <div>Gelveri</div> </div> </div> | 4900-4500 |
| Karanovo VI Gumelnita Cucuteni | Karabas Tepeyani Yumurta Tepe Kavaklı I Tilkiburnu | Dündartepe Alisar 14-12M | 4500-3800 |

Note: The radiocarbon position of Büyük Güllücek, Orman Fidanlığı and Ikiztepe II in contrast to typological dating (marked by arrows).



Fig. V.8. Relief map of the Balkans, showing selected sites.

CHAPTER VI. THE ROLE OF TURKISH THRACE BETWEEN THE BALKANS AND ANATOLIA

VIA. THE EXPLANATION OF CULTURAL CHANGE IN NEOLITHIC AND CHALCOLITHIC TURKISH THRACE

In Balkan prehistory, there are three important periods of cultural change, each of which is the subject of conflicting opinions. The first major change occurred during the transition from foraging to farming. The second change is about the appearance of dark burnished ware in the Balkans and the third major change occurred during the Chalcolithic period in all aspects of cultural life. In the following discussion, I shall seek to explain these changes, as well as to explain the role of Turkish Thrace during these changes in the Balkans.

VI.A.I. The origins of farming

Since the beginning of European archaeology, the transition from foraging to farming has been regarded as the result of a migration or colonisation from Near East, i.e. a diffusionist model (Childe 1957; Milošević 1949; 1956). The concept of an aceramic Neolithic cultural phase in Greece mainland similar to those of the Near East was introduced by Milošević to support the diffusionist idea (Milošević 1956: 208-210). Based on the comparison of the available C14 dates and the genetics of living European populations, Ammerman and Cavalli-Sforza proposed a model of "demic diffusion" or "wave of advance" which argued the spread of agriculture by the more or less continuous migration of people, at average pace of 1 km a year with continuing population growth immediately following the advancing front of agricultural settlement (Ammerman and Cavalli-Sforza 1984). Van Andel and Runnels accepted and moderated this view (1995). They argue that the Neolithic advance in the Southern Balkans proceeded mainly in areas not occupied by indigenous populations, and the migrant farmers preferred to occupy the flood plains, as in Central Anatolia (1995). They also argue that migration occurred in discrete steps, 'the interval dictated by geography and by the population growth in each of a slow rising number of parent areas' (1995: 497). All of these assumptions have been criticised later (e.g. Budja 1999: 128). Özdoğan suggests that the reason for migration was social turbulence that took place at the end of the PPNB in the Near East, which stimulated an influx of people in small groups to the West, and they carried with them almost all aspects of their culture (Özdoğan 1997). Cavalli-Sforza argues for expansion rather than migration, as the former involves both population growth and replacement (Cavalli-Sforza 1996).

An alternative model was first represented in D. Clarke's agriculture replacement model. Clark suggest that prior to the transition to agriculture in Europe, late Palaeolithic and Mesolithic hunter-gatherers were transhumant and primarily focused on reliable plant resources in the region. With changing landscape and climates, large migratory herbivores become less reliable as a food resource, leading toward the eventual collapse of the transhumant system in favour of marine resource exploitation during summer. During the time of intensive plant use, and plant and animal manipulation, the Neolithic domesticates became available (Clarke 1976). However, the domesticates, such as emmer wheat and sheep were not available in Europe. Price (1983: 771) suggests that 'the end of the Mesolithic is not brought about by an advance of invading farmers but rather reflects a period of readaptation and adjustment to changing environments and new subsistence practices' and stresses the importance of adaptations of Mesolithic foragers that enable the transition to agriculture.

Excavations at Franchthi Cave in the Argolid show a long-term cultural continuity in the Mesolithic and the initial Neolithic (Perlès 1990: 135). In the initial Neolithic at the Franchthi Cave, the chipped stone industry is similar to that of the preceding Mesolithic. Cattle and pig were hunted at Mesolithic Franchthi. However, goat and sheep were almost certainly introduced (Payne 1985). Lentil and barley were also exploited at Mesolithic Franchthi. Wild lentil, einkorn and barley exist in Greece today. However, there is no evidence for wild emmer outside of the Near East, which is the most important cereal for Neolithic Greece (Halstead 1996). Therefore, at least some of the domesticates must have been introduced to Greece. Dennell (1985: 165-167) suggests that the existing Mesolithic population in Southeast Europe was predisposed toward the acceptance of novel resources, such as emmer or sheep. Barker proposed that the idea of agriculture and the necessary crops spread to Southeast Europe either through cultural diffusion via exchange networks without any movement of people, or through natural means, and were then adapted by the indigenous people (Barker 1985: 71).

The availability model was introduced by Zvelebil and Rowley-Conwy (1984). This model describes frontier forager / Neolithic farmer interaction, and the resulting spatial dynamics. They suggest that before the formation of a contact area between foragers and farmers there is an availability zone where hunter-gatherers are able to gain access to Neolithic goods and resources. Later, the availability zone develops into a contact zone where increased competition for resources causes farming to be substituted for hunting and gathering. In the last phase, the farming system is consolidated into full-scale agriculture. The best documented examples of long-term forager-farmer interactions in Southeast Europe derived from the Lepenski Vir culture. Mesolithic communities continued to rise in the region for several hundred years after

the appearance of the local Early Neolithic and did not adopt available farming practices (Radovanović 1996). The Lepenski Vir culture also shows that a sedentary life style cannot be used as a hallmark of the Neolithic Europe, because a sedentary life style began developing in the Mesolithic (see Chapter III). Chapman argues that the farmers who transmit the ideas and the resources germane to farming onwards across Europe were themselves hunter-gatherers or descended recently from hunter-gatherers. He believes forager-farmer exchange networks in the Aegean basin probably kick-started the rise of farming in Europe (Chapman 1994a). The more established social anthropological studies of complex hunter-gatherers show that non-sedentary complex communities engaged in activities, ideologies and belief system little different from those of settled communities (Bailey 1997: 44-45). It seems likely that since hunter-gatherers would have a large radius of movement, they would come in contact with farming communities, and could thus appropriate their knowledge and techniques. However, the absence of detailed investigations in Western Anatolia prevents us from defining these initial contacts. I believe that only very detailed investigations in Western Anatolia can solve the problem of how farming was transmitted into Europe. Today there are no detailed excavations in Western Anatolia.

There are a number of processes related to the beginning of the Neolithic period in Northwest Anatolia and also Turkish Thrace. First, Thissen (1999) and Özdoğan (1999b) suggest that Epi-palaeolithic populations on the Eastern Marmara coast and probably the Eastern part of Turkish Thrace adapted Neolithic elements. The subsistence of settlements, such as Fikirtepe and Pendik were mixed hunting, fishing and stock breeding with a little farming (Roodenberg 1995: 167-168). The chipped stone industries of Fikirtepe and Pendik are similar to the preceding Epi-palaeolithic tradition (Özdoğan 1999b). However, there is no excavated Epi-palaeolithic site in this region. Secondly, according to Özdoğan's endemic movement scenario, the first wave of movement took place during the pre-pottery Neolithic period, originating from Central Anatolia (Özdoğan 1997; 1999b). Recently, two sites were found in the inner part of Western Anatolia - Keçiçayırı and Kalkanlı - and the flint industry from these sites are similar to the pre - and Early Neolithic lithic assemblages of Central Anatolia (Efe 2000). Another two sites in the Çanakkale region - Çalca and Musluçeşme - were dated to the pre-pottery Neolithic by Özdoğan (Özdoğan 1999b; Özdoğan and Gatsov 1998). According to Özdoğan and Gatsov, the chipped stone industry of Çalca and Musluçeşme is different from those of Epi-palaeolithic tradition, and consists of large blades (Özdoğan and Gatsov 1998). Microlithics are totally absent. I believe that we need much more detailed investigations on these sites to prove the existence of the pre-pottery Neolithic in North-Western Anatolia.

On the basis of a second, much more intrusive wave, directly linked to late Çatal Höyük, the full Neolithic was established first in the area around Lake Iznik and second in the Northern Aegean (Özdoğan 1997: 22). According to this hypothesis, the earliest farming village site of Ilipinar, near the Iznik Lake, was settled by farmers migrated from Central Anatolia around 6000 cal. BC (Roodenberg 1995: 171-174; Thissen 1999: 37).

On the basis of the Hoca Çeşme excavations, the origins of the Southeast European Neolithic as well as Turkish Thrace were explained as the result of colonisation by Özdoğan. According to Özdoğan, Hoca Çeşme is an Anatolian colony in Turkish Thrace (Özdoğan 1998b: 450). He argued that the pottery and small finds, such as figurines and pseudo-stamp seals of early Hoca Çeşme are similar to those of the Lake District of Southwest Anatolia. Moreover, he tried to support the colonisation theory by using the presence of a so-called fortification wall around the early settlement of Hoca Çeşme (Özdoğan 1998b). He believes the transition to agriculture in Turkish Thrace offers evidence of violent relationships. However, there is no evidence of violence. Hoca Çeşme is situated on an important trade route. Thus the fortification wall around Hoca Çeşme may not be related to defence but to settlement enclosure related to exchange networks. The C14 dates of Hoca Çeşme show that early Hoca Çeşme is contemporary with the Early Neolithic in Thessaly (e.g. Sesklo) and Macedonia (e.g. Nea Nikomedeia). Most of early Hoca Çeşme material is also similar to Nea Nikomedeia. When we compare the C14 dates of Hoca Çeşme to other sites in Thessaly and Macedonia, the Hoca Çeşme IV-III dates match with Achilleion Ia-IIIb and Sesklo (Gimbutas et al. 1989: 24-25; Wijnen 1981: 131). When we look at the Nea Nikomedeia in Macedonia, with the exception of one suspiciously early C14 date (8180±150 BP., Q-655), almost all the dates from Nea Nikomedeia match with Hoca Çeşme IV-III (Pyke and Yiouni 1996: 195). Thus, we can say that early farming communities settled simultaneously in the Southern part of Turkish Thrace, Thessaly and Macedonia. In addition, some recent extensive surveys in Western Anatolia revealed new Early Neolithic sites with pottery similar to early Hoca Çeşme.

To sum up, the Eastern Marmara coast and probably the Eastern part of Turkish Thrace are marked by at least some continuity in material culture and subsistence economy between the Epi-palaeolithic and the Neolithic (e.g. Fikirtepe and Pendik). C14 dates indicate that early farming communities settled simultaneously in the Southern part of Turkish Thrace, Thessaly and Macedonia. However no Mesolithic sites were investigated in Western Anatolia as well as the Southern part of Turkish Thrace. At this stage, we are not sure that, in the Eastern part of Turkish Thrace, the mode of Neolithic transition was the transfer of ideas to indigenous population, and in Western part of Turkish Thrace was the migration of farmers themselves.

VI.A.2. Dark burnished wares

In Balkan prehistory, one of the most debatable arguments is about the origin and distribution of black burnished ware. Most of the early argument about the black burnished ware of the Balkans was interested mainly in locating its origin, as a part of diffusionist model, i.e. the origin of this ware in the Balkans as a result of migrations from the Near East (Milojčić 1949). Garašanin presented his concept of the Balkan-Anatolian complex on the basis of the formation of the Balkan dark burnished ware cultures originating as a result of diffusion from South and East (Garašanin 1956). The concept included as a specific element a slow, continuous migration from Anatolia to the Middle Danube. The Balkan-Anatolian complex was accepted by most of the post-1950s diffusionists such as Jovanović, Benac and Dimitrijević (see Chapman 1981). The concept of the Balkan-Anatolian complex has recently been put on the agenda once again (Garašanin 1998; 2000). Özdoğan suggests a similar concept - the Anatolian-Balkan Cultural zone- in which, from the beginning of the Neolithic period up to the beginning of the Bronze Age, most of the Balkan Peninsula, Western and Central Anatolia was a single cultural zone (Özdoğan 1993a). Recently, Garašanin's Balkan-Anatolian complex was called by Efe the Thracian-Northern Anatolian complex (Efe 2001:64), and was called by Nikolov the Circumpontic cultural zone (Nikolov 1998b). On the basis of the Orman Fidanlıği excavations and surface survey in the Eskişehir region of Northwest Anatolia, Efe shared the early diffusionists' idea that the origin of the Vinča culture was the result of a migration from Anatolia (Efe 2000; 2001).

The origin of the black burnished ware that appeared in Greece during the transition from the Middle to Late Neolithic was also related, by some, to migration from the East (Holmberg 1964b; Gallis 1987). The origin of the black burnished ware of the Paradimi culture was also sought in Anatolia (Bakalakis and Sakellariou 1981). Some archaeologist also accepted that the Karanovo III culture was not of local origin in Thrace (see Nikolov 1998b).

Georgiev insisted on the local origin of the Karanovo III culture in Thrace (Georgiev 1971). New excavations in tell Karanovo show that the once-claimed hiatus between Karanovo I and II, and between Karanovo II and III, are not attested (Hiller and Nikolov 1997). There is a gradual development in pottery. Chapman stated his belief in an autochthonous development that led to the emergence of the Vinča culture and its black burnished ware (Chapman 1981). Others such as Séfériadès also supported an autochthonous development of the Vinča culture (1990).

In Turkish Thrace, Vesselinovo-Karanovo III settlements were found in the Meriç and Ergene basins. Karanovo III pottery is particularly common in Turkish Thrace. However, there is no evidence of Karanovo III settlements on the Northern

shore of the Sea of Marmara, except at the cave site of Yarimburgaz. This can be explained by coastal morphological changes in the area. Only a little evidence exists about the preceding Karanovo II horizon. In Aşağı Pinar, a large burned house contemporary to Karanovo II was found. Inside the house, Karanovo II-type pottery was found, including some white on red painted sherds. There are as yet no detailed publications. Only a paucity of evidence from Turkish Thrace prevents us from defining the origin of the black burnished ware in Turkish Thrace. However, the early Neolithic culture of Fikirtepe in North-Western Turkey is characterised by dark burnished ware. Fikirtepe-type of pottery has also been found in Turkish Thrace (e.g. Yarimburgaz Cave). C14 dates from the late Fikirtepe culture overlaps Karanovo II. It seems that the dark burnished wares are known in Turkish Thrace from the beginning of Neolithic. A local origin of the dark burnished ware in Turkish Thrace can be accepted.

VI.A.3. Changes during the Chalcolithic period in the Balkans and explanatory models for Turkish Thrace

During the millennium from ca. 4500 to 3500 cal. BC, major changes occurred in the East Balkans. These changes occurred in all the aspects of cultural life (Chapman 1991). In Northeast Bulgaria, tells such as Ovcarovo, Poljanica, Targoviste and Radingrad are enclosed and defended, whether by banks and ditches or by palisades, thereby heightening the boundedness of the social groups. Opposed entrances, whether two or four, are the norm, adding to the geometric order of the settlement forms (Chapman 1991; Todorova 1986). Each tell is planned. In Durankulak on the Black Sea coast, a new technique of dry-stone wall foundations for post frame houses was identified (Todorova 1989). In this period, very large planned Cucuteni settlements were found in Ukraine and Moldavia. For example, Majdanetskoye is about 270 ha, Talyanki 450 ha and Dobrovody 250 ha (Zbenovich 1996: 207). These enormous settlements contained between 1300 and 2700 houses.

During the Neolithic period of the East Balkans, most dwellings had a domestic function, and in some of them, figurines and cult vessels were found which were used in some form of domestic ritual. This situation changed in the Chalcolithic period, when the differentiation of domestic/private space developed into one of partly public/ritual, partly domestic/private space (Chapman 1991). Chapman (1991) argues that in the East Balkans there is a continuum of ritualization of space, from the house with cult room to the creation of special shrines (e.g. Hotnica; Angelov 1959), to ritual sectors with a complex of household shrines (e.g. the "temple complex" at Dolnoslav; Radunčeva 1989). The construction of shrines in formerly domestic/private space makes a new way of using and controlling elaborated esoteric knowledge developed by ritual specialists.

There is a trend towards gradually increasing diversity and wealth of grave goods in cemeteries in the East Balkans such as Goljamo Delcevo, Vinica, Devnja, Ovcharovo, Targoviste, Radingrad and Poljanica (Todorova 1986; Chapman 2000a: 168-179). However, the trend reaches its peak in the Varna cemetery, where a small number of the 281 graves contain massive concentrations of artefacts in a bewildering array of raw materials (Ivanov 1989). Some 10 cemeteries have been discovered in the Cucuteni-Tripolye culture, most notably the well-known cemetery of Vykhvatintsi. The cemetery consisted of 74 graves with grave goods (Zbenovich 1996: 209). Cemeteries have also been discovered on or near the Black Sea coast in the Hamangia culture (Berciu 1966), most notably of Golovita, Cernovoda and Durankulak (Bailey 2000: 196-197). The East Balkan cemeteries contain rich grave goods made of gold, silver, copper, marble, alabaster, rock crystal, shell, bone and fired clay.

The densification of exchange networks in the Chalcolithic period of the East Balkans took place against the background of the hypothesised increase in productivity. The introduction of a wider range of materials into already existing networks led to an enlarged sphere of prestige goods that tended to be consumed in the contexts of the rituals of the living and dead. There was a dialectical relationship between the prestige of the socio-technique artefacts and the ritual nature of their context of consumption (Chapman 1991). This self-reinforcing trend culminated in the ascription of "prime value" to certain metals, such as gold and rarely silver (Renfrew 1986). The production of prestige goods as well as artefacts of prime value was an additional route towards increasing status differentiation. It is the expansion of socio-political alliances rooted in lineage power, with its ideological power dispersed through a number of ritual centres and based on economic power gained through intensified surplus production channelled into far-flung exchange networks (Chapman 1991). One documented aspect of exchange network in the East Balkans is copper. During the Chalcolithic period in the Balkans, a major role is played by the large-scale extraction and distribution of copper. Copper was mined extensively, especially at Ai Bunar in South-Central Bulgaria and Rudna Glava in Serbia (Jovanović 1976; Černych 1978b). However, recent lead isotope analyses from tells close to the Ai Bunar mine show that the vast majority of tools from these tells were made of copper introduced from Northwest of Bulgaria (Pernicka et al. 1993). In addition, the lead isotope analyses of copper objects from the Durankulak cemetery show that objects made of copper deriving from different sources (Chapman 2000a: 124). The late Chalcolithic period also witnessed the use of the marine mollusc *Spondylus* and *Dentalium* as raw materials. Especially the Varna and Durankulak cemeteries show a gross abundance of *Spondylus* (Todorova and Vajsov 1993). *Spondylus* was probably an Aegean mollusc and it was also found at Macedonian sites, such as Sitagroi and Dikili Tash (Bailey 2000). A total of 212 finished rings, beads and

buttons from *Spondylus* and 63 pieces of waste or unfinished samples were also found at Dimini in Greece (Halstead 1993). During the Late Chalcolithic period, exchange networks must have played an important part in the acquisition of raw materials.

The first stage of the Chalcolithic in Turkish Thrace is represented by the Kocatepe culture. Ten settlements have been found along the Southern foothills of the Istranca Mountain. Kocatepe pottery shows some similarities to the Maritsa culture in Bulgaria and Pre-Cucuteni culture in Moldavia and Ukraine. Kocatepe forms bear only general similarities to Maritsa and Pre-Cucuteni potteries. However, similarities are apparent in decorative techniques and designs. The large network of interaction involving different groups led to the development of similar artifactual styles over large geographical regions.

During the later stage of Chalcolithic period in Turkish Thrace, there was a decrease in the number of the settlements. Only a few small sites were discovered in the upper Ergene Basin. The apparent dramatic decrease in population of Turkish Thrace in the Late Chalcolithic period is one of the major research problems in the region, and suggests that we are facing a pattern of regional significance. The occurrence of small settlements with unsophisticated artefacts in Turkish Thrace in this period may be explained by climatic changes. However, it is not clear whether climatic changes were the direct cause of depopulation of Turkish Thrace in the Late Chalcolithic period. On the other hand, intensive archaeological surveys were conducted over only a small part of Turkish Thrace, so it is possible that one big Late Chalcolithic site has been missed.

Let us first examine the climatic hypothesis. Lamb argues that climatic changes occurred in 4500-3500/3000 cal. BC (Lamb H. 1982: 29). This period is characterised by increases in temperature. Summer temperature was 1 to 3C° higher than today (Lamb H. 1982). According to Todorova, climatic changes occurred at the end of the Chalcolithic period not the beginning (Todorova 1993; 1995). She argues that, at the end of the fifth millennium BC, the final stage of climate optimum, when mean annual temperatures reached their maximum of 3C° higher, was a catastrophic event for Southeast Europe (Todorova 1995: 89). The rising sea level caused the water table to rise, resulting in the flooding of the plains. I shall mention below, the Black Sea has a regression also during the end of the 3rd millennium BC. According to Huntley who works on relationships between vegetational changes and climatic changes in Europe, 'the *Quercus-Pinus* sclerophyll forests of Southeast Europe have increasing abundance of several major sclerophyll taxa since 8000 BP. with some taxa peaking in abundance ca. 2000 BP.' (Huntley 1990: 516). These changes imply increasing temperatures in Southeast Europe since 8000 BP. The reduction in annual rainfall may also relate to increase in temperature. Changes in annual distribution of rainfall could have caused a decline in agricultural production. One important point is that increases in temperature

can be expected to lengthen the growing season in some regions where agricultural potential is currently limited (Tegart et al. 1990). This means increases in temperature affect different regions in different ways. Increases in temperature also affect the crop calendar. Temperature increases may extend the geographic range of some insect pests currently limited by temperature (Tegart et al. 1990). Most agricultural diseases have greater potential to reach severe levels under warmer conditions. Probably most important for agriculture are the possible changes in climatic variability, such as the magnitude and frequency of droughts, storms, heat waves and severe frosts (Tegart et al. 1990). The apparent increases in mean annual temperatures in regions could sufficiently increase heat stress on crops. Climatic changes may affect crop and livestock productivity in Turkish Thrace, because the main temperatures in the Edirne region are higher than in East Bulgaria, and the annual rainfall is lower than in East Bulgaria (Fig.I.2). This means increases in temperature may affect the Edirne region more than other regions in the East Balkans. However, there are, as yet, no detailed geomorphological studies and no pollen diagrams for Turkish Thrace.

Climatic changes can also be directly related to changes in the coastal morphology of the Black Sea and the Sea of Marmara. During the regression periods of the Mediterranean in the Pleistocene, the straits were blocked by land, thus the Black Sea and the Sea of Marmara were no more than freshwater lakes with considerably lower levels than today (Stanley and Blanpied 1980; Özdoğan 1985b). The first intrusion of warm and saline waters from the Aegean to the Sea of Marmara took place ca. sixth millennium B.C. to be soon followed by the establishment of a link with the Black Sea, that lasted until the sea level was 3 to 5 m higher than today (Stanley and Blanpied 1980). When the natural environment of the region changed, settlers moved and the coastal areas were deserted for almost a millennium. The archaeological evidence from Bulgaria and Western Georgia indicate that the Black Sea had another considerable regression between 4850 and 4000 BP (Draganov 1995; Shilik 1997: 117). Along the Bulgarian coast of the Black Sea, about 12 submerged sites dating from the Late Chalcolithic to the Early Bronze II period have been found at the depths of 4 to 8 m below present sea-level (Draganov 1995; Özdoğan in press). Probably during the end of the 3rd millennium BC, the coastal morphology of the Black Sea changed, because of sudden rise in sea level. The present conditions were established only by the 1st millennium B.C. (Stanley and Blanpied 1980: 541; Özdoğan 1997: 29). All these evidences indicate that Turkish Thrace is an active region of geomorphological change.

Another explanation of depopulation of Turkish Thrace in the Late Chalcolithic period concerns soil. In response to increasing drought conditions the soils in Turkish Thrace may have become poorer. However, there is no soil analysis in Turkish Thrace, and consequently no evidence in support of this hypothesis. On the other hand,

examinations in the Nova Zagora region in Bulgaria show how soil conditions changed during the prehistoric period. In the Nova Zagora region, an abrupt soil change happened during the Early Bronze Age (Dennell and Webley 1975). For instance, at Ezero there is a sharp difference between the Late Neolithic and Early Bronze Age soils. A light - coloured, similar to the eroded form of the Cinnomonic Forest soil has changed to a darker and heavier riverine clay, which is not so suitable for crop cultivation (Dennell and Webley 1975: 101). According to Dennell and Webley, many tells were abandoned because of the deposition of such clay formations (1975: 101).

The occurrence of small settlements with unsophisticated artefacts in Turkish Thrace in the Late Chalcolithic period may be explained by an "attraction model". When there are negative social or economic conditions in one region and positive conditions in other region, people often perceived that the best opportunities for their development lay in migration to a region with positive conditions. The reason for such movements may be explained by regional conflicts, disease, famine, religious need or economic collapse. Anthony pointed out that migrants often seem simply to move to places that are familiar and offer social support, rather than moving to the place that would mark the best economic choice (Anthony 1997: 25). People do not move about randomly, but follow kin and co-residents to places that have an attractive reputation.

The decrease in the number of settlements, and the occurrence of a few small Late Chalcolithic settlements in Turkish Thrace may be explained by the collapse of the exchange network. The East Balkans had a great development in the economic, social, political and symbolic life in the Chalcolithic period. The production of prestige goods as well as artefacts of prime value from gold, copper and the marine shells, was an important route towards increasing status differentiation. Lineage and ideological power based on economic power gained through intensified surplus production channelled into long-distance exchange networks. In the Late Chalcolithic period, exchange networks shifted the economic, political and ideological core to the East Balkans. It is possible that East Balkan "power" created links between exchange and value, and powerful groups controlled the distribution of prestige goods as well as artefacts of prime value. Turkish Thrace has copper sources in the Istranca Mountain. A small gold source was also found at Slivarovo in the Istranca Mountains (Archibald 1998: 23). A large number of malachite beads were found in the Middle and Late Neolithic levels of Aşağı Pinar (Özdoğan 1999a). There are, as yet, no excavated Chalcolithic sites in Turkish Thrace, and no Chalcolithic metal object was found. Copper was mined extensively in South-Central Bulgaria and especially Serbia, and Chalcolithic people were supplied with copper from these regions (Pernicka et al. 1993). The primary sources of silver are also in North-Western Bulgaria. When long-distance exchange networks developed in the East Balkans, - cf. North-Eastern Bulgaria

or Moldavia - some regions, such as the upper Ergene basin of Turkish Thrace, lost their importance.

It is assumed that there is a spatial dimension to kinship relations in most Neolithic and Chalcolithic social networks. Hence, local exchange networks are dominated by exchange between kinsfolk. Chapman argues that the pattern of artefact distributions in the Balkan Neolithic and Chalcolithic gives little support for the notion of closed marriage networks (Chapman 2000a: 34). There is a high probability that overlapping marriage networks channelled access to wider, non-kinship-based exchange networks. In Balkan prehistory, the distribution of goods from sources to people desiring them may imply one of two possibilities: a wider set of non-kin-based barter networks or an extended suite of kin-based enchained relations (Chapman 2000a: 34). Long-distance exchange becomes so important for maintaining the social structure of local communities. Objects of great value were received primarily through networks of transactions conducted with non-kin rather than with kinsfolk or neighbours. If some goods with a high social value were distributed between neighbours or kin, this took place in completely different social contexts. It is possible that the complexities of enchained relations across long distances may well result in a collapse of the exchange network or, at least a partial reduction in size.

There are no detailed investigations about Late Neolithic exchange networks of Turkish Thrace. Thus it is impossible to determinate how already existing networks collapse. Most of Turkish Thrace is marked by flat settlements. As the Aşağı Pinar excavations show, the cultural layers are thick in the Neolithic period. A large number of malachite beads and Aegean *Spondylus*, were found in the Late Neolithic levels of Asagi Pinar (Özdoğan 1999a). At the Late Neolithic settlement of Yağcili in the Edirne region, a metabasite stone axe - probably from Şarköy region - was found. These examples may show an exchange network in the Neolithic period.

The apparent dramatic decrease in population of Turkish Thrace during the Late Chalcolithic period still poses a problem. The occurrence of small settlements with unsophisticated artefacts in this period may be explained by climatic changes, soil changes or exchange network collapse. It is not yet clear whether network collapse was due to political events or geomorphological changes or some other factors.

VI.B. THE EXPLANATION OF THE SIMILARITIES IN MATERIAL CULTURE BETWEEN THE BALKANS AND ANATOLIA.

Recent explanations about the similarities in material culture between the Balkans and Anatolia were outlined by Özdoğan (1993a), Thissen (1993) and Steadman (1995). All share a more or less similar point of view: a homogenous cultural zone between Anatolia and the Balkans. All agree that the similarities cannot be explained by diffusion, migration and simple exchange mechanism; the similarities resulted from the fact the entire Balkan peninsula, along with Northern and Central Anatolia, constituted an entire cultural zone from the Neolithic to the Bronze Age, and in this cultural zone, cultural processes move along at a similar rate, but with internal diversity (Özdoğan 1993a: 117 ; Thissen 1993: 208 ; Steadman 1995: 27). Anatolian cultural processes adapted, changed and evolved more closely in concert with Southeast European cultures (Steadman 1995: 16). On the other hand, none of them explain in detail, how or why cultural processes developed or how Anatolia adopted elements from Southern European cultures. Özdoğan has developed a concept of the Anatolian-Balkan Cultural zone on the basis of the Near Eastern model (Özdoğan 1993a). During the Ubaid and Uruk periods, the whole of Mesopotamia constituted an entire cultural zone. However, Near Eastern communities established a centralised political power controlling production and exchange, and expressed their power through acquisition, exchange and display of exotic materials. Özdoğan argued that the only difference between the Near East and Anatolian-Balkan Cultural zones is that the regions in Anatolia and the Balkans are richer than the Near East, thus no preventing any centralised social groups from emerging in these regions to control production and exchange (Özdoğan 1993a: 178). However, it is impossible to accept this view. As I mentioned above, in the East Balkans such power existed during the millennium from ca. 4500 to 3500 cal. BC. However, the East Balkan - type of planned settlements with a complex household shrines, elaborate pottery and prestige goods do not occur in every region of Anatolia and the Balkans.

First of all, there are not enough excavations and intensive surveys in Anatolia, and not enough material for the characterisation for each different period in Anatolia, so reliable explanation of similarities in material culture between the Balkans and Anatolia is difficult. With a few exceptions, e.g. horned handles, none of the Anatolian pottery is exactly identical to Balkan pottery. However, the pottery bears general similarities with the Balkans. In addition, most of the similarities in material culture occur in Karanovo III and III-IV periods in the Balkans. I believe that the similarities in material culture between the Balkans and Anatolia may be explained by the interaction sphere model. In addition, we cannot totally dismiss models of exchange and ethnicity for explanation of

the similarities in material culture between two regions, because I believe these models are also related to the interaction sphere model.

The interaction sphere concept, as originally developed by J. Caldwell (1964), was designed to deal with the wide geographical distribution of material culture. An interaction sphere is defined by the presence in the archaeological record of shared material items providing evidence of ongoing contact between two or more local cultures and suggesting something of its nature, such as the ceremonial objects associated with a religious cult. Interaction spheres tend to develop around some central organised principle, and several kinds of interaction spheres may be discernible according to their shared organising principle, each displaying its own set of diagnostic criteria. We may cite Balkan religious beliefs, shared by North and Central Anatolian groups, and archaeologically documented by the Balkan type of figurines found in the Late Chalcolithic sites, such as Ikiztepe and Dündartepe in the Black Sea Littoral, and Alisar in Central Anatolia. In Anatolia, the context of deposition of figurines is obscure. However, with the exception of some figurines in Ikiztepe, all figurines are fragmentary. Broken objects may symbolise an agreement, obligation, friendship or common bond between individuals or groups.

Interaction spheres may exist at different scales, involving small communities within a limited area, or communities of various sizes within a larger geographic region, or long distance interregional transactions. The transactions themselves may be of a strictly commercial nature, such as exchange in utilitarian goods, or they may be primarily social, in the form of interregional marriage exchanges, kinship rituals or ceremonial reciprocity, or political alliances. Steadman (1995) tried to explain the similarities in material culture between the Balkans and Anatolia with the concept of "interregional interaction". According to her, 'although much of the Central Anatolian pottery looks similar to the Balkan assemblages, and certain similar enough to suggest some type of interaction, it does not have the demonstrative force of imported wares, and is not all indicative of colonization (1995: 27). She continued that 'the type of contact may have been more complicated than simple trade or exchange, but less blunt than migration'. She also agrees about movement of the cultural processes. However, she never explains how this movement happened. The problem in her argument is without any relationships, such as exchange and migration between two regions, how we can talk about interaction. She also supports the idea of homogeneous cultural zone. I believe that it is not possible to support homogeneity of Anatolia and the Balkans with only pottery evidence. Furthermore, even pottery between two regions is not identical, at least not in all periods and all regions.

There are many factors that determine the geographical range within which similar artefact types are found, such as the form of the distribution system,

technological knowledge and availability of raw materials etc. Exchange is considered an important suite of practices linking different cultures. The importance of social functions of exchange was first noted by Malinowski in "kula" exchange (1922) and Mauss on gift exchange (1925). These systems served to reinforce social bonds and maintain face-to-face contacts between members of different local communities. These systems can also create long-lasting ties of indebtedness and obligation between people, and transactions may play an important role in marriage rites, in cementing alliances and ties of affiliation, and in the creation and maintenance of political authority. The development of trading networks and accompanying relationships of mutual economic dependence between widely separated peoples appears to have been an important factor in the growth of societies. Such commercial relationships also served to facilitate other types of relationships between trading partners, including marriages and other social bonds, as well as political alliances formed for defensive purposes. A result was the creation of large networks of interaction involving peoples of varied culture, often spanning broad geographic areas and even linking different geographic regions. Exchange is also an important factor for transferring ideas. On the basis of symmetry analysis of Neolithic pottery in Greece and the Aegean, Washburn argues that an interaction sphere is defined as an information or item exchange system through which aspects of culture are transferred and which ultimately produces regional similarities (Washburn 1983). Interchange between different groups in the Balkans and Anatolia probably led to development of similar artifactual styles; for example, similarities in horned handles between the Balkans and Anatolia in the Neolithic period or design similarities between the Gelveri group and the Balkan Maritsa, Pre-Cucuteni and Vinča groups.

Societies are spatially delimited units of human to human and human to environment interaction, and salient ethnic identities, which link people sharing similar assumptions, values, and standards within society and may tie together people living in different societies (Schortman 1989; Schortman and Urban 1987). According to Schortman and Urban:

'interactions among societies take place in terms of ethnic identities. In fact, the physical territory over which ethnic status are employed depends on the range of resources considered important by people in different societies and the extent to which the need for these resources brings individuals together into repeated contact requiring predictable interactions. If resources of significance are highly localized, ethnic status remain restricted to a specific society. If the people of a society require considerable amounts of resources from beyond their borders, the intensity of interactions with diverse societies increases, as do the range and

spatial extent of the identities designed to facilitate the interchanges (Schortman and Urban 1987: 64).

Silent ethnic identities should be recognised in the archaeological record by the consistent spatial association of the material signifiers of identity affiliation. Their visibility is heightened by the fact that in many cases those people sharing a common salient identity live together within a society. For example, the Bell Beaker culture of Western and Central Europe in the third millennium BC is defined by the spread of a limited range of prestige goods (Shennan 1989). Assuming that prestige items served as status markers in life, their widespread distribution, easy visibility and standardized associations suggest that they were used by the elite of contemporary populations to symbolise membership in a single salient identity (Shennan 1986). The Bell Beaker network can be interpreted as a spatially extensive salient affiliation system linking the leaders of otherwise autonomous societies. During the Chalcolithic period in the Balkans, one of the most important exchange items was copper. Copper was mined extensively in South-Central Bulgaria and Serbia. Very large copper sources occur in the Black Sea region of Anatolia. Copper objects from Ikiztepe and Dündartepe in the Black Sea littoral of Anatolia are similar to those from Gumelnița settlements. Gold objects, similar to those from Gumelnița settlements were also found in Ikiztepe (Bilgi 2000: Fig.26). An exchange network between Gumelnița and Northern Anatolian groups can also be interpreted as a spatially extensive salient affiliation system linking the people of different autonomous societies. The similarities in material culture between two societies can also be explained with the existence of similar past ethnic identities; several ethnic groups often share the same technologies and styles (Hill 1989). However, there are also some exceptions. For example, The Hopi and Hopi-Tewa Pueblos live in three contiguous villages but have different languages, religions and social patterns, nonetheless manufacturing identical pottery (Stanislawski 1978: 225-226).

The local interest group has been defined by T. Taylor as the minimal grouping of any individuals who are connected by a specific local interest, whether technological, artistic and economic or kinship (Chapman and Dolukhanov 1993). An example of the local interest group is discussed by Arnold who eschews starting study from the ethnic group in favour of the population of artefact producers, moving upwards towards definitions of overlapping networks of production styles and workshop products. According to him, there is a stronger relationship between the artefacts and the producer population than between artefacts and ethnicity (Arnold 1989). On the basis of the ethnographic evidence, Helms has developed a long distance specialist model (1988). He discussed the ethnographic evidence for the high status of such specialists in their own communities, since they have witnessed far more than local people and they have

lived to tell the tale. Traveller's tale is the main medium of information exchange. When such specialists returned home, their ideas and informations held special interest and possibly even cultural significance. In this way Gumelnița and Northern Anatolian tells were focus of long-distance specialists whose special skills at presenting the exchange objects, which they brought, won prestige for the objects as much as for the specialist.

Interaction sphere occurs among different societies of ethnic identities. Information, such as pottery design or different forms or different beliefs, passed one society to other with, for instance marriage. The development of exchange networks within societies with different ethnic identities establish trading partners, and other types of relationships between trading partners, such as marriages also form. Vitelli (1995) argues that women were most closely associated with household, and might also have been closer to the technologies and materials for making pottery, and better able to organize the diverse tasks necessary for manufacturing. On the basis of exchange and marriages between different societies, technological and ideological knowledges combine.

Shennan argues that social groups identified on the basis of the distribution of archaeological remains did not necessarily conceive of themselves as unified or harmonious groups, and archaeological cultures will rarely be co-terminous with past language groups or political entities (Shennan 1989). Social processes may lead either to deliberate homogenising or a deliberate exaggeration of artefact styles at social boundaries (Hodder 1979). However, the people occupying a certain geographical area shared many elements of their material practice means they must have shared some aspects of the social forms and cultural understanding that went with them. Probably, groups who shared similar materials that occupy different regions in the Balkans and Anatolia shared also some aspect of social forms and cultural understanding between each other. In addition, groups who shared similar materials do not necessarily mean that these groups are homogenous groups.

VI.C. THE ROLE OF TURKISH THRACE BETWEEN THE BALKANS AND ANATOLIA

The similarities in material culture between Anatolia and the Balkans during the Late Neolithic and Chalcolithic periods, and some possible explanation models are outlined above. Probably the most important question is about the role of Turkish Thrace between the Balkans and Anatolia. In the Neolithic period, horned handles seem to form the most consistent link between the Balkans and Anatolia. The horned handles of Anatolia shows remarkable similarities to horned-handles from the Karanovo III and

III-IV cultures in the Balkans. In Büyük Güllücek, İkiztepe II and Orman Fidanligi groups, horned handles can be seen on bowls and jars. In Büyük Güllücek and İkiztepe II, they commonly applied on "S" shaped bowls, sometimes have a carination on their body (Fig.V.7:4-8). Handles are joining the neck and body, or sometimes rim to body of vessels. Horned handles can also seen on rounded and carinated bowls. Horned handles are applied on necked, sometimes with everted rims and rounded jars. Occasionally two horned handles are applied on one jar. In Karanovo III and III-IV, horned handles are generally applied on necked jars and mugs. Occasionally they are applied on "S" shaped bowls. With the exception horned handles, no exact similarities in pottery between the groups, such as Büyük Güllücek, İkiztepe II, Orman Fidanligi in Anatolia and Karanovo III and III-IV in the Balkans. Karanovo III pottery is particularly common Turkish Thrace. However, Karanovo III-IV material can be seen only in the Edirne and Kırklareli regions. The Western and Southern parts of Turkish Thrace are represented by Maslidere and Töptepe cultures. These cultures are characterized by coarse ware. Until now, Töptepe and Maslidere types of sherds were not found in Anatolia. On the other hand, there are connections between Besiktepe-Kumtepe Ia material in Western Anatolia and Aegean Island and Büyük Güllücek, İkiztepe II and Orman Fidanligi groups. As I mentioned above, they should be more or less contemporary. Probably different regions may organise around kin-based system sharing common ideologies, and in these regions, exchange is the important factor for transferring ideas.

The closest parallels for the Gelveri pottery of Central Anatolia comes from the Balkans in the Maritsa, Pre-Cucuteni, Sava and Boian cultures. In Turkish Thrace, this period is represented by Kocatepe culture. At the first sight, there are no close similarities between Gelveri pottery and Kocatepe. Typical wedge-like incision decoration of Gelveri is absent at Kocatepe. The Gelveri types of bowls are also absent at Kocatepe. Only the chessboard motif, as found at Alişar, looks similar to some Kocatepe sherds. On the other hand, spiral designs occur on both Gelveri and Kocatepe.

The late Chalcolithic period of Turkish Thrace is marked by a decrease in the number of the settlements. The Late Chalcolithic settlements are small and low relative to those of other Late Chalcolithic settlements in the Balkans and Anatolia. It seems that there are no similarities between the Late Chalcolithic pottery in Central Anatolia and Turkish Thrace. However, carinated bowls from Düdartepe in the Black Sea Littoral have only general parallels in Turkish Thrace. On the other hand, as yet, there is no excavated Late Chalcolithic settlement in Turkish Thrace.

It seems evident that there is no direct connection between communities in Turkish Thrace and those in Anatolia. The only possible contact occurred in the Karanovo III period. However, from the beginning of the Late Neolithic to the end of

the Chalcolithic, different pottery traditions over established in Turkish Thrace and Anatolia. On the other hand, similarities in materiel culture, especially metal objects and figurines (Fig.V.7:11-14) during the Late Chalcolithic period, indicate that there must have been some contacts between the Gumelnița culture in the Balkans and the Black Sea Littoral region of Anatolia. The lack of similarities between the Black Sea Littoral of Anatolia and Turkish Thrace indicates that this contact probably happened by sea.

CHAPTER VII. CONCLUSIONS

At the beginning of our research in Turkish Thrace, the most important question in our mind was what was the role of Turkish Thrace in relation to the Balkans and Anatolia? I believe that our intensive survey and detailed investigations of sites and artefacts in Turkish Thrace have made much headway not only in filling the substantial gaps existing in the cultural sequence of Turkish Thrace, but also revealing the role of Turkish Thrace in prehistory. However, there are still some unsolved problems in the prehistory of Turkish Thrace such as, what was the role of Turkish Thrace in the spread of farming to Europe or what was the reason for the apparent dramatic decrease in population of Turkish Thrace during the millennium from ca 4500 to 3500 cal. BC. In the following conclusion, I shall discuss the main results of this study.

In the early 1960s what subsequently become known as the "new archaeology" was born. There have been major changes within the discipline. New methodologies in surface surveys have been also emerged. Intensive surveys with sampling designs were increasingly practised, especially in the 1970s and 1980s. Despite one of the early intensive survey techniques being applied in Turkey (cf. the survey of Griki Hacıyan: Redman and Watson 1970), no intensive archaeological survey methods were accepted in Turkish archaeology. When we look at the early surveys in Turkish Thrace, whether D. French and S.A. Kansu's surveys in the early 1960s or M. Özdoğan's surveys in the 1980s and 1990s, all were designed as extensive surveys.

Our work in Turkish Thrace comprised the conduct of detailed intensive survey over a selected part of Turkish Thrace - the Edirne region -, and also used systematic field collection techniques on selected sites. A 1x1 km block survey in the Ortakçı-Kavakli area, transect survey in the Tepeyani-Bağlarıçi area and 10x10 m grid-collected on selected sites in the Edirne region have provided important evidence relating to past land use and settlement systems. As a result of our surveys, we propose that most of the settlements can be described as mobile, re-occupied flat settlements. Settlements in the Edirne region are marked by shifting over a long period. Settlement movement is either dispersed over a small area such as a circle of 1 km radius (Restricted Mobility), or over wider areas such as a circle of 10-20 km radius (Extensive Mobility). Systematic field collection in the Edirne region shows that off-site prehistoric pottery scatters did not form an almost unbroken carpet throughout the landscape like in Boeotia or in Near East. Only Roman pottery scatters in Turkish Thrace formed an almost unbroken carpet throughout the landscape. Most of the off-site artefacts in the Ortakçı-Kavakli area were found immediately around the settlements and in the Tepeyani-Bağlarıçi area were found in small concentrations around the settlements. The off-site artefacts in the Edirne region can be explained by manuring, seasonal huts or accidental breakage.

The Ergene River constitutes the main central plain of Turkish Thrace and the Edirne region is a part of the upper Ergene basin. The settlements from the upper and lower Ergene basin are marked by flat settlements with tells being absent. Tells are the typical settlement type in the Northern part of the Sea of Marmara and the Gelibolu Peninsula. Only two tells were found in inner Turkish Thrace; both are dated to the Early Bronze Age.

It is difficult to identify precise hierarchical relationships between settlements in the Edirne region as well as the whole Turkish Thrace. However, in the Edirne region, it seems that during the Early Bronze Age there were settlements acting as the cores of community areas. Flannery's work about determination of site catchments and territorial analysis can be applicable to the Early Bronze Age settlements in the Tunca Valley. We assumed that the Early Bronze Age settlements of the Tunca River used an area of 2.5 km radius or half-hour walk. Theoretical territories were created using Thiessen polygons. Other method, the landscape method indicates that geographical features such as hills and streams may have acted as boundaries.

One of the important questions in Turkish Thrace concerned the origins of farming. As a result of our investigations, we suggest that the Southern part of Turkish Thrace is characterized by the Western Anatolian Early Neolithic ware tradition. Materials from Hoca Çeşme, Hamaylitarla and Kaynarca are related to the Western Anatolian red slipped and burnished ware tradition. Most of the early Hoca Çeşme material is also similar to Greek sites such as Nea Nikomedeia in Macedonia. The Eastern part, as well as the inland part of Turkish Thrace is characterized by the Fikirtepe culture. C14 dates of the early Fikirtepe culture and the early Hoca Çeşme indicates that both cultures are more or less contemporary and are slightly earlier than the Karanovo I horizon of Bulgaria. Özdoğan's (1999b) and Thissen's (1999) investigations show that Epi-palaeolithic populations on the Eastern Marmara coast and probably in the Eastern part of Turkish Thrace adapted Neolithic elements. At this stage, we are not sure that, in the Eastern part of Turkish Thrace, the mode of Neolithic transition was the transfer of ideas to indigenous population, and in Western part of Turkish Thrace was the migration of farmers themselves. There are no excavated Epi-palaeolithic sites in Turkish Thrace and Western Anatolia, and no large-scale excavation of Neolithic sites in Western Anatolia. Thus, it is difficult to answer the question about the origins of farming in Turkish Thrace. The Fikirtepe culture is characterised by the dark burnished ware. C14 dates from the late Fikirtepe culture overlaps Karanovo II. It seems that the dark burnished ware are known in Turkish Thrace from the beginning of Neolithic. The local origin of the dark burnished ware in Turkish Thrace can be accepted.

One of the main results of this study was the definition of different cultural complexes in the Late Neolithic period. The Southern part of Turkish Thrace is represented by the Toptepe culture, elements of which extended to the Tunca basin. It is characterized by the micaceous and the coarse wares. Until now, no Toptepe pottery was found either in the Balkans or in Anatolia. The Late Neolithic period in the Western part of Turkish Thrace is represented by the Maslidere culture. Maslidere material is close to the Toptepe coarse ware. Again no Maslidere pottery has been found either in the Balkans or Anatolia. Karanovo III-IV settlements have been found only in the Edirne and Kırklareli regions. At the end of the Late Neolithic period, changes are observed in material culture in the Edirne and Kırklareli regions. On the basis of our surveys in the Edirne region, the Bulgarian Kalojanovec type of pottery was found together with the Çardakalti type of local pottery in a number of settlements in the Edirne region. Until now, no Çardakalti pottery has been found in the Balkan sites.

One of the important results of this study concerned Chalcolithic occupations in Turkish Thrace. Until our investigations, the Chalcolithic period in Turkish Thrace was largely *terra incognita*. Our investigations show that, during the first stage of the Chalcolithic period, there was a local culture called Kocatepe. Kocatepe pottery shares similar elements of the Maritsa culture in Bulgaria and the Pre-Cucuteni culture in Romania and Moldavia. Archaeologists such as Özdoğan believes that there are no Late Chalcolithic settlements in Turkish Thrace. However, our investigations in the Edirne region proved that this idea was incorrect. The Balkan Karanovo VI sites were found in our surveys in the Edirne region, and typological analysis of the pottery from these sites shows chronologically two different phases. In spite of the similarities between the Late Chalcolithic settlements of Turkish Thrace and Karanovo VI- Gumelnița as well as Krivodol-Salcuța cultures in the Balkans, pottery from settlements in Turkish Thrace are unsophisticated. It seems that the pottery from Turkish Thrace was the product of local development, which was closely related to the Karanovo VI-Gumelnița and Krivodol-Salcuța cultures. One of the research problems in Turkish Thrace is the apparent dramatic decrease in population of Turkish Thrace in the Late Chalcolithic period. All Late Chalcolithic sites are small and low relative to those of other Chalcolithic cultures in the Balkans. There are as yet no geographical studies, soil analyses or pollen diagrams from Turkish Thrace. However, it seems most likely that the depopulation of Turkish Thrace can be explained by a combination of environmental changes, soil changes or exchange network collapse.

Material things have two separate kinds of meaning; the first one is functional or material, and the second is concerned with the content of ideas and symbols (Hodder 1986:121). Artefacts are made for a purpose, but in use acquires further associations

and meanings in addition to that initial purpose, and the processes associated with this are very similar to those involved in social relationships. Being embedded in social relationships, artefacts operate in ways that are similar to human beings, and they come to have social identities. Artefacts from the Edirne region were investigated to take into consideration of Tilley's suggestion that material culture needs to be understood temporally in its active and biographical context (Tilley 1999:264); how the artefact is produced, and from what sources and raw materials, their subsequent exchange and consumption contexts. The production of any artefacts can be described as a sequence of steps that requires the acquisition of raw materials, the operation of particular techniques and the skill or social knowledge of the performer. This sequence of steps has been described as a "chaîne opératoire". The distribution of goods from sources to people desiring them is important function of the exchange system. The social functions of exchange systems can create long-lasting ties of indebtedness and obligation between people, and transactions may play an important role in marriage rites, in cementing alliances and ties of affiliation, and in the creation and maintenance of political authority. It is difficult to separate acts of consumption from acts of production and exchange. Each consumer effectively appropriates new goods. It is the process of consumption, and decay of material objects that permits the production of new goods through which society itself is reproduced both in the relations of production and consumption established.

In the case of pottery, it was utilised in a series of social practices through the Neolithic period, but it is also significant that particular vessels were used for specific functions in specific times. The implication of specific function, which can be recognised in the decoration of pottery, is that they were significant in interpersonal relations and transactions, introducing difference and discontinuity into social life at a very intimate level. In Turkish Thrace, some pots such as Kocatepe high-pedestalled foot stands with elaborate decoration, may be used for specific functions, such as religious rituals or ceremonies involving food.

In the case of stone axe, it was a basic tool type in subsistence, an exchange item, personal statutes and prestige item. It has also a symbolic value. Hardness, durability and colour have been valued (Whittle 1995). Factories or manufacturing areas are places where craft specialists perform a limited set of activities on a frequent, perhaps regular basis in order to produce items for exchange with other group of people. Prehistoric axe factories in the Sarköy region of Turkish Thrace are one of the most important discoveries in Turkish Thrace. They are unique in the prehistoric record of the Balkans and Anatolia. There are, as yet, no systematic excavations in axe factories. However, on the bases of surface evidence, we assumed that the axe factories were used from the Early Neolithic to the Early Bronze Age. Petrological analyses of

prehistoric stone axes in Turkish Thrace are still in progress. However, early results show that at the Early Neolithic settlement of Hoca Çeşme, stone axes were made of same rock - metabasite - as the Şarköy sources. One axe from Yağcılı in the Edirne region seems also to be made of the same rock as the Şarköy sources.

One documented aspect of the network is probably honey flint from Bulgaria, which reached the Tunca and Maritsa basins¹⁷. In the Neolithic and Chalcolithic periods in Turkish Thrace, the chipped stone industry consists mainly of local milky-brown flint, quartz and other siliceous rocks. Honey flint is a rare but important component of most assemblages. When we compare the Neolithic and Chalcolithic periods, there was an increase in the quantities of honey flint in the Chalcolithic period.

In recent archaeological literature, there have been increasing arguments about similarities in material culture between the Balkans and Anatolia. Our intensive work in Turkish Thrace has made much headway in understanding its role between the Balkans and Anatolia. Similarities in material culture have been demonstrated by examining some major artefacts types such as, pottery, figurines and metal objects. In pottery, horned handles seem to form the most consistent link between the Balkans and Anatolia. Horned handles of the Büyük Güllücek, İkiztepe II and Orman Fidanlığı groups show similarities to horned handles from the Karanovo III and III-IV cultures in the Balkans. However, characteristic forms and decoration of Karanovo III and III-IV are absent in these groups. Comparable materials for the Büyük Güllücek, İkiztepe and Orman Fidanlığı groups come from the Aegean islands and Western Anatolia, Besiktepe-Kumtepe Ia culture. On the other hand, characteristic forms and decorations of Karanovo III pottery were found in Ilipinar VB in North-Western Anatolia. Although most of archaeologists suggest that Büyük Güllücek, İkiztepe II, Karanovo III-IV and Besiktepe-Kumtepe Ia are contemporary, C14 dates indicate that Anatolian groups can be dated to the Early Chalcolithic period, ca. 4900-4500 cal. BC.

In Central Anatolia, one of the interesting potteries is Gelveri. The closest parallels for Gelveri pottery come from the Balkan Maritsa, Pre-Cucuteni and Vinča cultures. However, none of these Balkan cultures are exactly identical to Gelveri, but bear general similarities. During the Late Chalcolithic period there must have been some contacts between the Black Sea Littoral of Anatolia and the East Balkans. Similarities are apparent in the metal finds and figurines, also to some extent in the repertoire of shapes. Copper flat axes, pins and figurines from Düdartepe and İkiztepe show close similarities to the Karanovo VI, Cucuteni and Vinča cultures.

Similarities in material culture between the Balkans and Anatolia may be explained by the interaction sphere model. Interaction spheres may exist at different

¹⁷ A few pieces of honey flint were found in the Early Neolithic levels of Hoca Çeşme in the delta of Maritsa (Meriç) (Gatsov 2001).

scales, involving communities of various sizes with larger or limited geographical regions, or long distance interregional transactions. The transactions themselves may be of a commercial nature, such as exchange or they may be primarily social, in form of internal marriage exchanges, kinship rituals or ceremonial reciprocity, or political alliances. Societies are spatially delimited units of human to human and human to environment interaction, and salient ethnic identities, which link people sharing similar assumptions, values, and standards within society and may tie together people living in different societies. On the basis of similarities in material culture between Anatolia and the Balkans in ca. 4900-4500 cal. BC, we argue that an interaction sphere is defined as an information or item exchange system through which aspects of culture are transferred and which ultimately produces regional similarities. Similarities in material culture between two regions in ca 4500-3500 BC may be explained by exchange in utilitarian goods. Such commercial relationships served to facilitate other types of relationships between trading partners, including marriages and other social bonds, as well as political alliances formed for defensive purposes.

The material culture in Turkish Thrace and Anatolia indicates that there is no direct connection between communities in Turkish Thrace and those in Anatolia. The only possible indirect contact occurred in the Karanovo III period.

To sum up, it seems evident that the present stage of our work in Turkish Thrace is still at a very initial stage. There are as yet no detailed geomorphological studies, soil analyses and pollen diagrams of Turkish Thrace. Present excavations still have not yielded a complete picture of the cultural sequence. I believe that more intensive surveys in small areas, large geomorphological investigations and more proper excavations are needed.

Appendix 1. Turkish Thrace Field Record Form.

Appendix 2. Turkish Thrace Grid Collection Form.

TURKISH THRACE FIELD RECORD FORM

| | | |
|------------|-------|----------|
| SITE NAME: | DATE: | INITIALS |
|------------|-------|----------|

| | |
|----------------|--------------|
| FIELD NO: | ORIENTATION: |
| SURFACE COVER: | VISIBILITY: |

| Transect No | Pottery | Chipped Stone. | Grndst. | Others | Daub Fragments |
|-------------|---------|----------------|---------|--------|----------------|
| 1 | | | | | Y: N: |
| 2 | | | | | Y: N: |
| 3 | | | | | Y: N: |
| 4 | | | | | Y: N: |
| 5 | | | | | Y: N: |
| 6 | | | | | Y: N: |
| 7 | | | | | Y: N: |
| 8 | | | | | Y: N: |
| TOTAL | | | | | |

| Probable Chronological Periods Represented; | | | | | | | |
|---|----------|-------------|-------------|------------|----------|---------------|----------|
| Early Neo.. | Kar. III | Kar. III-IV | Kalojanovec | Cardakalti | Toptepe | Maslidere | Kocatepe |
| | | | | | | | |
| Gumelnita | EBA I | EBA II | EBA III | MBA | LB - EIA | Hell. - Thra. | Roma |
| | | | | | | | |

Notes:

TURKISH THRACE GRID-COLLECTION FORM

| | | |
|------------|-------|----------|
| SITE NAME: | DATE: | INITIALS |
|------------|-------|----------|

| | |
|----------------|-----------------------|
| GRID NO: | SIZE OF GRID SQUARES: |
| SURFACE COVER: | VISIBILITY: |

| | | | | |
|---------|----------------|----------|--------|----------------|
| FINDS | | | | |
| Pottery | Chipped Stone. | Grandst. | Others | Daub Fragments |
| | | | | Y: N: |

| | | | | | | | |
|---|----------|-------------|-------------|------------|----------|--------------|----------|
| Probable Chronological Periods Represented; | | | | | | | |
| Early Neo.. | Kar. III | Kar. III-IV | Kalojanovec | Cardakalti | Toptepe | Maslidere | Kocatepe |
| | | | | | | | |
| Gumelnita | EBA I | EBA II | EBA III | MBA | LB - EIA | Hell. – Thra | Roma |
| | | | | | | | |

| |
|--------|
| Notes: |
|--------|

Appendix 3. PLATES.

LIST OF PLATES

PLATE I. Mat impressions on Neolithic and Chalcolithic sherds (top) ; Sherds showing the methods of forming (bottom).

PLATE II. Early Neolithic pottery from Hamaylitarla (top) ; Late Neolithic (Karanovo III-IV) pottery from Yağcili.

PLATE III. Middle Neolithic (Karanovo III- Vesselinovo) pottery from Altiagaç, Gavurdere and Köprübaşı.

PLATE IV. Late Neolithic (Çardakalti) pottery from Avariz / Kumocağı (top) ; White on Black painted sherds from Avariz / Kumocağı (bottom).

PLATE V. Late Neolithic (Kalojanovec) pottery from Avariz / Kumocağı, Yağcili and Köprübaşı (top) ; Late Neolithic (Maslidere) pottery from Altiagaç (bottom).

PLATE VI. Late Neolithic (Maslidere) pottery from Altiagaç, Gavurdere and Değirmençeşme.

PLATE VII. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Karabaş, Tepeyani.

PLATE VIII. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Kocatepe, Karabaş, Tepeyani, Yumurta Tepe and Kavakli 2.

PLATE XIX. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Yumurta Tepe, Kocatepe, Arpaç, Kavakli 2 and Tepeyani.

PLATE X. Chalcolithic (Pre-Cucuteni / Maritsa (= Kocatepe) pottery from Yumurta Tepe, Karabaş, Tepeyani, Kocatepe.

PLATE XI. Chalcolithic (Karanovo VI- Gumelnița) pottery from Yumurta Tepe (top) and Kavakli 1 (bottom).

PLATE XII. Chalcolithic (Karanovo VI- Gumelnița) pottery from Tepeyani (top) and Karabaş (bottom).

PLATE XIII. Neolithic Chipped stone implements from Köprübaşı, Avariz / Kumocağı (top) and Yağcili (bottom).

PLATE XIV. Chalcolithic Chipped stone implements from Yumurta Tepe, Tepeyani (top) and Kavakli 1 and 2 (bottom).

PLATE XV. Axe roughouts from Hamaylitarla (top) ; Axe roughouts, flakes and hummerstones from Yartarla (bottom).

PLATE XVI. Stone axes from Yumurta Tepe and Yagcili (top) and Yumurta Tepe, Yağcili, Köprübaşı, Karabaş, Kavakli 1 and Kavakli 2 (bottom).

PLATE XVII. Grinding stone (?) for axes from Yağcili (top) ; Figurines from Yağcili, Arpac, Avariz, Kocatepe (bottom).

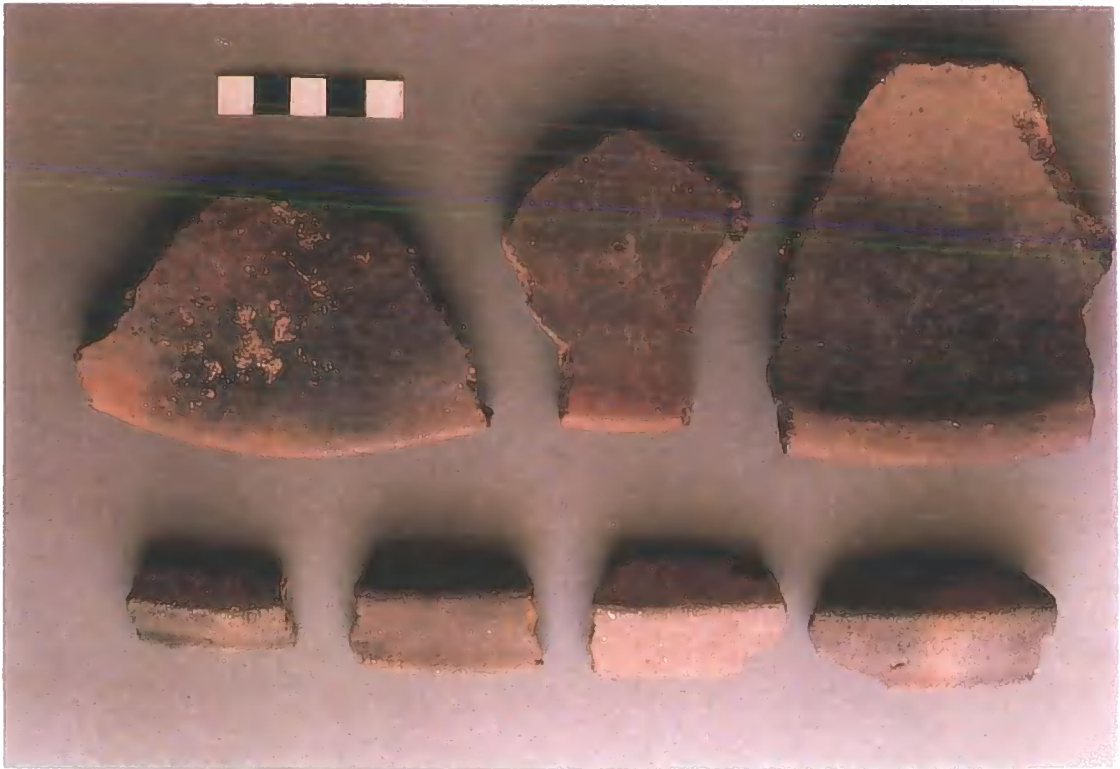
PLATE XVIII. Figurines from Yağcili, Tepeyani and Kocatepe.

PLATE XIX. Neolithic settlements of Yağcili (top) and Chalcolithic settlements of Yumurta Tepe (bottom).

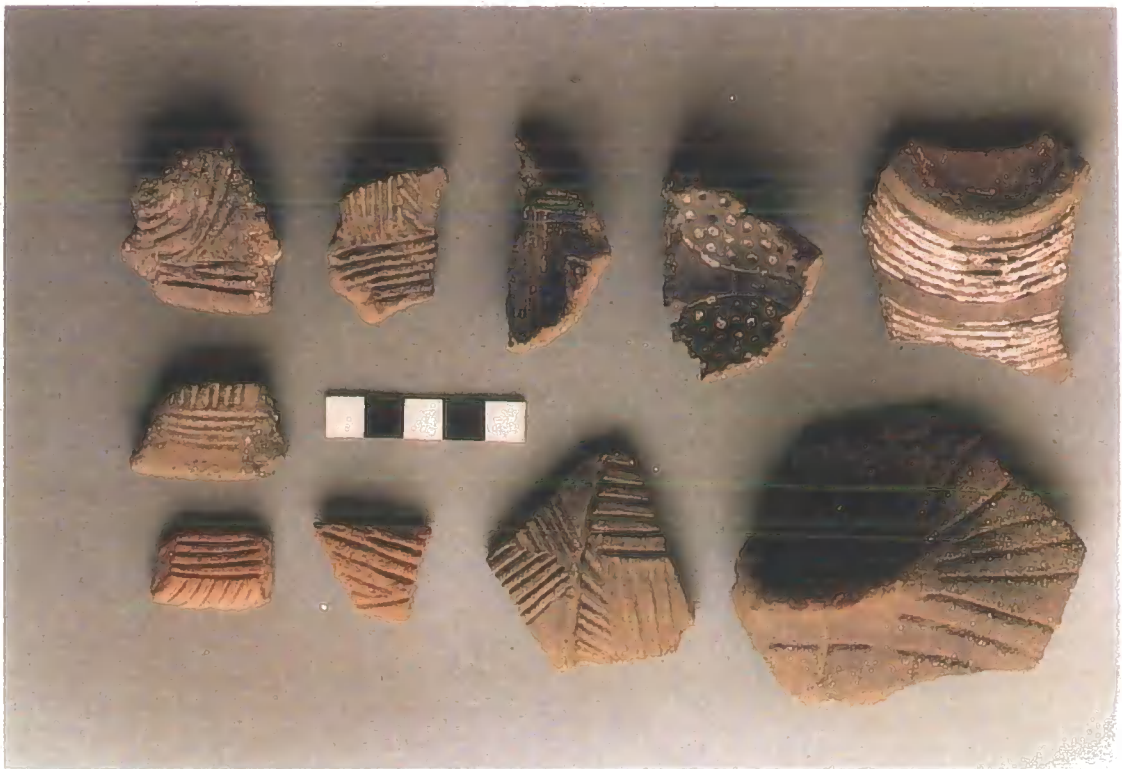
PLATE XX. Kavakli-Ortakçi area (top) and Tepeyani-Bağlarıçi area (bottom).



















X



XI





XIII



XIV



X V



XVI



XVII



XVIII





XX



Bibliography

Admiralty Handbook (1917) Turkey in Europe. London: War Staff Intelligence Division.

Admiralty Handbook (1942) Turkey I. London: War Staff Intelligence Division.

Aikens, M. C., 1995. First in the world. The Jamon Pottery of Early Japan. In W. K. Barnett and J. W. Hoopes (eds), *The Emergence of Pottery: Technology and Innovation in Ancient Societies*: 11-21. Washington DC: Smithsonian Institute Press.

Alkim, H., 1986. İkiztepe Geç Kalkolitik Çağ Keramigi. *Anadolu Araştırmaları* X: 99-116.

Alkim, U. B., H. Alkim and Ö. Bilgi. 1988. *İkiztepe I.* Ankara: TTKY.

Allen, M. J., 1991. Analysing the Landscape: a Geographical Approach to Archaeological Problems. In A. J. Schofield (ed.), *Interpreting Artefact Scatters. Contributions to Ploughzone Archaeology*: 39-57. Oxford: Oxbow Books.

Alpaslan-Roodenberg, S., 2001. Newly found human remains from Mentese in the Yenisehir Plain: The season 2000. *Anatolica* XXVII: 1-14.

Ammerman , A. J. and L. L. Cavalli-Sforza. 1984. *The Neolithic transition and the genetics of population in Europe.* Princeton: Princeton University Press.

Ammerman, A. J., 1985. Plow-zone experiments in Calabria, Italy. *Journal of Field Archaeology* 12: 33-40.

Ammerman, A. J., and L. L. Cavalli-Sforza. 1973. A population model for the diffusion of early farming in Europe. In C. Renfrew (ed.), *The Explanation of Culture Change. Models in Prehistory* : 343-357. London: Duckworth.

Angelov, N., 1959. Zlatnoto sykrovsce ot Hotnica. *Arkheologiya (Sofia)* 1/1-2:38-46.

Anthony, D. W., 1997. Prehistoric Migration as Social Process. In J. Chapman and H. Hamerow (eds), *Migrations and Invasions in Archaeological Explanation*: 21-32. International Series 664. Oxford: BAR.

Archibald, Z. H., 1998. *The Odrysian Kingdom of Thrace*. Oxford: Clarendon Press.

Arnold, D. E., 1989. Patterns of learning, residence and descent among potters in Tikal, Yucatan, Mexico. In S. Shennan (ed.), *Archaeological Approaches to Cultural Identity*: 40-56. London: Allen Unwin.

Arnold, J. E. M., 1989. The Mesolithic Communities of the Sodo Valley, Portugal, in their Ecological Setting. In C. Bonsall (ed.), *The Mesolithic in Europe: Papers Presented at the 3th International Symposium*: 614-631. Edinburgh: Edinburgh University press.

Arsebük, G., 1996. The Cave of Yarimburgaz (The oldest Stratified Site Yet Known in Turkey). In M. Magen and M. Rashad (eds), *Vom Halys zum Euphrat* : 113. Münster: Ugarit-Verlag.

Arsebük, G., 1998. Yarimburgaz Mağrası Pleistosen Arkeolojisi ile ilgili Son Çalışmalara 1997 Gözüyle Özet bir Bakış. *TÜBA-AR* 1: 9-26.

Audouze, F., 1999. New advances in French Prehistory. *Antiquity* 73: 167-175.

Bahn, P., 1992. *Collins Dictionary of Archaeology*. Glasgow: Harper Collins.

Bailey, D. W., 1990. The living house: signifying continuity. In R. Samson (ed.), *The Social Archaeology of Houses* : 18-48. Edinburgh: Edinburgh University Press.

Bailey, D. W., 1994. Reading Prehistoric Figurines as Individuals. *World Archaeology* 25/3: 321-331.

Bailey, D. W., 1996. Interpretation of Figurines: The Emergence of Illusion and New Ways of Seeing. *Cambridge Archaeological Journal* 6/2: 291-295.

Bailey, D. W., 1997. Impermanence and Flux in the Landscape of Early Agricultural South Eastern Europe. In J. Chapman and P. Dolukhanov (eds), *Landscapes in Flux. Central and Eastern Europe in Antiquity*: 41-58. Oxford: Oxbow Books.

Bailey, D. W., 2000. *Balkan Prehistory. Exclusion, Incorporation and Identity*. London: Routledge.

Bailey, D. W., R. Tringham, J. Bass, M. Stevanović, M. Hamilton, H. Neumann, I. Angelova and A. Radunčeva. 1998. Expanding the Dimensions of Early Agricultural Tells: The Podgoritsa Archaeological Project, Bulgaria. *Journal of Field Archaeology* 25: 373-396.

Bakalakis, G and A. Sakellariou. 1981. *Paradimi*. Mainz: Phillipp von Zabern.

Barker, G., 1985. *Prehistoric Farming in Europe*. Cambridge: Cambridge University Press.

Barker, G., 1991. Approaches to Archaeological Survey. In G. Barker and J. Lloyd (eds), *Roman Landscape. Archaeological survey in the Mediterranean region* :1-9. Oxford: British School at Rome.

Barley, N., 1994. *Smashing Pots; Feats of Clay from Africa*. London: British Museum.

Barnett, W. K., 1990. Small-scale Transport of Early Neolithic Pottery in the West Mediterranean. *Antiquity* 64: 859-865.

Barnett, W. K., and J. W. Hoopes (eds), 1995. *The Emergence of Pottery: Technology and Innovation in Ancient Societies*. Washington DC: Smithsonian Institute Press.

Barrett, J., 1987. Field of discourse: reconstituting social archaeology. *Critique of Archaeology* 7: 5-16.

Barrett, J., 1989. *Stone Circles of Britain*. British Series 215. Oxford: BAR.

Battaglia, D., 1983. Projecting personhood in Melanesia: the dialectics of artefact symbolism on Sabarl Island. *Man* 18: 289-304.

Battaglia, D., 1990. *On the Bones of the Serpent. Person, Memory and Mortality in Sabarl Island Society*. Chicago: University of Chicago Press.

Benac, A., 1973. *Obre II, a Neolithic Settlement of the Butmir Group at Gornje Polje*. Wissenschaftliche Mitteilungen des Bosnisch-Herzegowinischen Landesmuseums III :5-191. Sarajevo.

Berciu, D., 1961. *Contributii la probleme neoliticului in Romania in lumina noilor cercetari*. Bucuresti:Editura Academiei Populare Romania.

Berciu, D., 1966. *Cultură Hamangia. Noi Contribuții*. Bucharest: Institutul de Archeologia al Academiei RPR.

Bigazzi, G., M. Oddone and Z. Yegingil. 1995. A province study of obsidian artefacts from Ilipinar. In J. Roodenberg (ed.), *The Ilipinar Excavations I: Five seasons of field work in NW Anatolia 1987-91*: 143-150. Istanbul: Nedarlands historisch-archaeologisch Instituut.

Bilgi, Ö., 2001. *Protohistoric Age Metallurgists of the Central Black Sea Region: A new perspective on the question of the Indo-Europeans original homeland*. Istanbul: Ege

Binford, L. R., 1964. A Consideration of Archaeological Research Design. *American Antiquity* 29: 425-441.

Binford, L. R. and S. R. Binford (eds). 1968. *New Perspectives in Archaeology*. Chicago: Aldine.

Binford, L. R., 1972. *An Archaeological Perspective*. New York: Seminar Press.

Binford, L. R., 1980. Willow smoke and dogs tails: hunter-gatherer settlement systems and archaeological site formation. *American Antiquity* 45:4-20.

Binford, L. R., 1983. Long-term land use patterns: some implications for archaeology. In R. Binford (ed.), *Working at Archaeology* : 379-386. New York: Academic press.

Bintliff, J. L., 1992. Appearance and Reality: Understanding the Buried Landscape Through New Techniques in Field Survey. In M. Bernardi (ed.), *Archeologia del Paesaggio*: 89-137. Firenze: All'Insegna del Giglio.

Bintliff, J. L., 1999. Settlement and Territory. In G. Barker (ed.), *Companion Encyclopedia of Archaeology*. Vol 1: 505-545. London and New York: Routledge.

Bintliff, J. L., 2000. The Concepts of "Site" and "Offsite" archaeology in the surface artefact survey. In M. Pasquinucci and F. Trement (eds), *Non-Destructive Techniques*

Applied to Landscape Archaeology: 200-215. The Archaeology of Mediterranean Landscapes 4. Oxford: Oxbow Books.

Bintliff, J. L. and A. M. Snodgrass. 1985. The Cambridge/Bradford Boeotian Expedition: The First Four Years. *Journal of Field Archaeology* 12: 123-161

Bintliff, J. L. and A. M. Snodgrass. 1988. Off-site Pottery Distributions: A Regional and Interregional Perspective. *Current Anthropology* 29/3: 506-510.

Bintliff, J. L. and V. Gaffney. 1988. The Aeger Pharensis/Hvar Project 1987. In J. Chapman, J. Bintliff and B. Slapsak (eds), *Recent Developments in Yugoslav Archaeology*. International Ser. 431:151-175. Oxford: BAR.

Bintliff, J. L., P. Howard and A.M. Snodgrass. 1999. The Hidden Landscape of Prehistoric Greece. *Journal of Mediterranean Archaeology* 12/2: 139-168.

Bittel, K., 1969/70. Bemerkungen über die prahistorische Ansiedlung auf dem Fikirtepe bei Kadiköy (Istanbul). *Istanbuler Mitteilungen* 19/20: 1-19.

Blackwood, B., 1950. *The Technology of a Modern Stone-Age People in New Guinea*. Oxford: Oxford University Press.

Bognar, N., 1975. *Gorna Kremena*. Sofia: Nauka i Izkustvo.

Bognár-Kutzian, I., 1963. *The Copper Age Cemetery of Tiszapolgár-Basatanya*. Budapest: Akadémiai Kiadó publishing house of the Hungarian Academy of Sciences.

Bojadjiev, J., T. Dimor and H. Todorova. 1993. Les Balkans Orientaux. In *Atlas du Néolithique Européen I*: 61-110. Liège: Études et Recherches Archéologiques de l'Université de Liège.

Borić, D., 1999. Places that created time in the Danube Gorges and beyond, c. 9000-5500 BC. *Documenta Praehistorica* XXVI: 41-70.

Bottema, S., and H. Woldring. 1993. The Prehistoric Environment of the Lake Iznik Area. a palynological study. In J. Roodenberg (ed.), *The Ilipinar Excavations I*: 9-16. Istanbul: Nederlands historisch-archaeologisch Instituut.

Boyadziev, Y. D., 1995. Chronology of Prehistoric Cultures in Bulgaria. In D. W. Bailey and I. Panayotov (eds), *Prehistoric Bulgaria*. Monographs in World Archaeology 22 :149-191. Madison Wisconsin: Prehistory press.

Božilova. E., 1986. *Palaeoecological Conditions and Changes of the Vegetation of Eastern and South-Western Bulgaria During the Last 15000 Years*. (in Bulgarian). Unpublished PhD thesis: University of Sofia.

Božilova, E., and M. Filipova. 1975. Pollen Analysis of Cultural Layers of Varna Lake. *Izvestia na Narodna Muzei-Varna* XI(XXVI): 19-25.

Božilova, E., and M. Filipova. 1986. Paleoecological Environment in Northeastern Black Sea Area during Neolithic, Eneolithic and Bronze Periods. *Studia Praehistorica* 8: 160-165.

Bradley, R., 1998. *The Significance of Monuments: on the shaping of human experience in Neolithic and Bronze Age Europe*. London: Routledge.

Bradley, R., and M. Edmonds. 1993. *Interpreting the Axe Trade*. Cambridge: Cambridge University Press.

Braithwaite, M., 1982. Decoration as ritual symbol: a theoretical proposal and an ethnographic study in southern Sudan. In I. Hodder (ed.), *Symbolic and Structural Archaeology*: 80-88. Cambridge: Cambridge University Press.

Bray, W., 1983. Landscape with Figures: Settlement patterns, Locational Models, and Politics in Mesoamerica. In E. Z. Vogt and R. M. Leventhal (eds), *Prehistoric Settlement Patterns* : 167-193. Cambridge, Massachusetts: University of New Mexico and Peabody Museum of Archaeology and Ethnology Harvard University Press.

Bray, W., and D. Tramp. 1970. *The Penguin Dictionary of Archaeology*. New York: Penguin Books.

Budja, M., 1999. The transition to farming in Mediterranean Europe- an indigenous response. *Documenta Praehistorica* XXVI: 119-141.

Buitenhuis, H., 1994. Note an archaeozoological research around the Sea of Marmara. *Anatolica* XX: 141-145.

Caldwell, J. R., 1964. Interaction spheres in Prehistory. *Illinois State Museum Scientific Papers* 12/6: 133-156.

Cavalli-Sforza, L. L., 1996. The Spread of Agriculture and Nomadic Pastoralism: Insights from Genetics, Linguistics and Archaeology. In D. R. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*: 51-69. London: UCL Press.

Černych, E. N., 1978a. *Gornoe delo i metallurgija v drevnejšej Bolgarii*. Sofia: IBAN.

Černych, E. N., 1978b. Ainbunar – a Balkan copper mine of the fourth millennium BC. *Proceedings of the Prehistoric Society* 44: 203-217.

Chapman, J., 1976. *The Balkans in the Fifth and Fourth Millennium BC*. Unpublished PhD thesis: University of London.

Chapman, J., 1981. *The Vinča Culture of South-East Europe, Studies in Chronology, Economy and Society*. International Series 117. Oxford: BAR.

Chapman J., 1989. The Early Balkan Village. In S. Bökönyi (ed.), *Neolithic of Southeastern Europe and its Neareastern Connections*. *Varia Archaeologica Hungarica* II: 33-53. Budapest: Institute of Archaeology of Hungarian Academy of Science.

Chapman, J., 1991. The creation of social arenas in the Neolithic and Copper Age of South East Europe: the case of Varna. In P. Garwood, P. Jennings, R. Skeates and J. Toms (eds), *Sacred and Profane*: 152-171. Oxford: Oxbow Books.

Chapman, J., 1993. Social power in the Iron Gates Mesolithic. In J. Chapman and P. Dolukhanov (eds), *Cultural Transformations and Interactions in Eastern Europe* : 61-106. Basingstoke: Avebury.

Chapman, J., 1994a. The Origins of Farming in South East Europe, *Préhistoire Européenne* 6: 33-156.

Chapman, J., 1994b. Social power in the early farming communities of Eastern Hungary- Perspectives from the Upper Tisza region. *Jósa András Múzeum Évkönyve XXXVI* : 79-99.

Chapman, J., 1997. The Impact of Modern Invasions and Migrations on Archaeological Explanation. In J. Chapman and H. Hamerow (eds), *Migrations and Invasions in Archaeological Explanation*: 11-20. International Series 664. Oxford: BAR.

Chapman, J., 1998. Objectification, embodiment and the value of places and things. In D. Bailey (ed.), *The Archaeology of Value. Essays on prestige and the processes of valuation*: 106-130. International Series 730, Oxford: BAR.

Chapman, J., 2000a. *Fragmentation in archaeology. Persons, places and broken objects in the prehistory of South East Europe*. London: Routledge.

Chapman, J., 2000b. 'Rubbish-Dumps' or 'Places of Deposition'? Neolithic and Copper Age Settlements in Central and Eastern Europe. In A. Ritchie (ed.), *Neolithic Orkney in its European Context* : 347-362. Cambridge: McDonald Institute Monographs.

Chapman, J., and P. M. Dolukhanov. 1993. Cultural Transformations and interactions in Eastern Europe: theory and terminology. In J. Chapman and P. Dolukhanov (eds), *Cultural transformations and interactions in Eastern Europe*: 1-28. Basingstoke: Avebury.

Chapman, J., and H. Hamerow. 1997. On the Move Again: Migrations and Invasions in Archaeological Explanation. In J. Chapman and H. Hamerow (eds), *Migrations and Invasions in Archaeological Explanation*. International Series 664:1-10. Oxford: BAR.

Chapman, J., R. Shiel and Š. Batović. 1996. *The Changing face of Dalmatia: Archaeological and Ecological Studies in a Mediterranean Landscape*. Leicester: Leicester University Press.

Chappell, S., 1987. *Stone Axe Morphology and Distribution in Neolithic Britain*. British Series 177. Oxford: BAR.

Cherry, J. F., 1983. Frogs around the pond: perspective in current archaeological survey projects. In D. R. Keller and D. W. Rupp (eds), *Archaeological Survey in the Mediterranean Area*. International Series 155: 375-416. Oxford: BAR.

Cherry, J. F., 1984. Common Sense in Mediterranean survey? *Journal of Field Archaeology* 11: 117-120.

- Cherry, J. F., C. Gamble and S. J. Shennan. 1978. *Sampling in Contemporary British Archaeology*. British Series 50. Oxford : BAR.
- Cherry, J. F., J. L. Davis and E. Manziourani. 1991. *Landscape Archaeology as Long-Term History, Northern Keos in the Cycladic Islands*. Los Angeles: UCLA Institute of Archaeology.
- Childe, V. G., 1929. *The Danube in Prehistory*. Oxford: Clarendon.
- Child, V. G., 1951. *Man Makes Himself*. London: New American Library of World Literature.
- Childe, V. G., 1957 *The Dawn of European Civilisation*. 6th edition. London: Routledge and Kegan Paul Ltd.
- Christaller, W., 1966. *Central Places in Southern Germany*. Englewood Cliffs: Prentice-Hall.
- Clark, H. R. and A. J. Schofield. 1991. By Experiment and Calibration: An Integrated Approach to Archaeology of Ploughsoil. In A. J. Schofield (ed.), *Interpreting Artefact Scatters. Contributions to Ploughzone Archaeology* : 93-105. Oxford: Oxbow Books.
- Clark, J. G. D., 1965. Traffic in Stone Axe and Adze Blades. *Economic History Review* 18: 1-28.
- Clark, J. G. D., 1989. *Economic Prehistory*. Cambridge: Cambridge University Press.
- Clarke, D. L., 1968. *Analytical Archaeology*. London: Methuen.
- Clarke, D. L. 1976. Mesolithic Europe: The Economic Basis. In G. de G. Sieveking, I. H. Longworth and K. E. Wilson (eds), *Problems in Economic and Social Archaeology* : 449-548. London: Duckworth.
- Close, A. E., 1995. Few and Far Between: Early Ceramics in North Africa. In. W. K. Barnett and J. W. Hoopes (eds), *The Emergence of Pottery: Technology and Innovation in Ancient Societies*: 23-37. Washington DC: Smithsonian Institution Press.
- Comşa, E., 1974. *Istoria Comunitatilor Culturii Boian*. Bucureşti: EARSR.

Comşa, E., 1995. *Figurinele Antropomorfe Din Epocă Neolitică Pe Teritoriul României*. Bucuresti: Editura Academiei Romane.

Conkey, M. and R. Tringham. 1995. Archaeology and the Goddess: Exploring the Contours of Feminist Archaeology: 199-247. In A. Stewart and D. Stanton (eds), *Feminisms in the Academy: Rethinking the Disciplines*. Ann Arbor: University of Michigan Press.

Conolly, J., 1999. *The Çatalhöyük Flint and Obsidian Industry. Technology and Typology in Context*. International Series 787. Oxford: BAR.

Cory, H., 1956. *African Figurines: their ceremonial use in Puberty rites in Tanganyika*. New York: Grove Press.

Daniel, G., 1962. *The Idea of Prehistory*. London: Watts.

Daniel, G. and C. Renfrew. 1988. *The Idea of Prehistory*. 2nd edition. Edinburgh: Edinburgh University press.

David, N., J. Sterner and K. Gavua. 1988. Why pots are decorated? *Current Anthropology* 29/3: 365-389.

Demangel, R., 1926. *Le Tumulus dit de Protesilas*. Paris: De Boccard.

Demoule, J. P., and C. Perlés 1993. The Greek Neolithic: A New Review. *Journal of World Prehistory* 7/4: 355-416.

Dennel, R. W., 1984. The expansion of exogenous-based economies across Europe: The Balkans and central Europe: 93-115. In S. P. De Atley and F. J. Findlow (eds), *Frontiers and Boundaries in Prehistory*. International Series 223. Oxford: BAR.

Dennell, R. W., 1985. The Hunter-Gatherer / Agricultural Frontier in Prehistoric Temperate Europe. In S. W. Green and S. M. Perlman (eds), *The Archaeology of Frontiers and Boundaries*: 113-139. Orlando: Academic Press.

Dennell, R. W and D. Webley. 1975. Prehistoric Settlement and Land use in Southern Bulgaria. In E. Higgs (ed.), *Paleoeconomy*: 97-108. Cambridge: Cambridge University Press.

Derin, Z and E. Öner. 1997. Ulucak Höyük Kazilari ve Paleo-Coğrafya Araştırmaları 1995. XVIII. *Kazi Sonuçları Toplantısı 1*, Ankara: 411-439.

Detev, P., 1975. Excavations of Tell Yasateppe in Plovdiv during 1970 and 1971. *Bulletin des Musees de la Bulgarie du Sud* 2: 81-141.

Deuser, W. G., 1972. Late-Pleistocene and Holocene History of the Black Sea as Indicated by Stable-Isotope Studies. *Journal of Geophysical Research* 77: 1071-1077.

Dewdney, J. C., 1971. *Turkey*. London: Chatto and Windus.

Dickson, F. P., 1981. *Australian Stone Hatchets. a study in design and dynamics*. Sydney: Academic Press.

Doelle, W. H., 1977. A multiple survey strategy for cultural resource management studies. In M. S. Schiffer and G. J. Gumerman (eds), *Conversation Archaeology*: 201-209. London and New York: Academic Press.

Dönmez, Y., 1972. Trakyanin Bitki Coğrafyası. *Güney-Doğu Avrupa Araştırmaları Dergisi* 1: 217-234.

Draganov, V., 1995. Submerged Coastal Settlements from the Final Eneolithic and Early Bronze Age in the Sea around Sozopol and the Urdoviza Bay near Kiten. In D.W. Bailey and I. Panayotov (eds), *Prehistoric Bulgaria*: 225-242. Madison: Prehistoric Press.

Dumitrescu, V., 1980. *The Neolithic Settlement at Rast*. International Series 72. Oxford: BAR.

Dunnell, R. C., 1992. The Nation Site. In J. Rossignol and L. Wandsnider (eds), *Space, Time and Archaeological Landscape*: 21-41. New York: Plenum Press.

Dunnell, R. C. and W. S. Dancey. 1983. The siteless Survey: A Regional Scale Data Collection Strategy. *Archaeological Method and Theory* 6 : 267-287.

Duru, R., 1999. The Neolithic of the Lake District. In M. Özdoğan and N. Başgelen. (eds), *Neolithic in Turkey. The cradle of civilization* : 165-202. Istanbul: Arkeoloji ve Sanat.

Edmonds, M., 1990. Description, understanding and the chaîne opératoire. *Archaeological review from Cambridge* 9/1: 55-70.

Edmonds, M., 1995. *Stone Tools and Society*. London: B.T. Batsford.

Efe, T., 1989/90. Three Early Sites in the Vicinity of Eskişehir : Asmainler, Kanlıtaş and Keskaya. *Anatolica* 16: 36-39.

Efe, T., 1994. 1992 yılında Kütahya, Bilecik ve Eskişehir illerinde Yapılan Yüzey Araştırmaları. *XI. Araştırma Sonuçları Toplantısı*. Ankara: 571-592.

Efe, T., 1995. İç Batı Anadolu'da iki Neolitik Yerleşme: Findik Kayabaşı and Akmakça. In H. Erkanal (ed.), *Metin Akyurt Bahattin Devamı Kitapı*: 105-114. Istanbul: Arkeoloji ve Sanat.

Efe, T., 1996. The excavations at Orman Fidanlığı, an inland Anatolian site with Pre-Vinča elements. In F. Drasovean (ed.), *The Vinča Culture: Its Role and Cultural Connections* : 41-58. Timisoara: The Museum of Banat.

Efe, T., 2000. Recent Investigations in Inland Northwestern Anatolia and Its Contribution to Early Balkan-Anatolian Connections. In S. Hiller and V. Nikolov (eds), *Karanovo Band III. Beiträge zum Neolithikum in Südosteuropa*: 171-183. Wien: Phoibos Verlag.

Efe, T. (ed.). 2001. *The Salvage Excavations at Orman Fidanlığı. A Chalcolithic site in inland Northwestern Anatolia*. Istanbul: Ege.

Efstratiou, N., 1985. *Agios Petros: A Neolithic Site in the Northern Sporades. Aegean Relationships During the Neolithic of the 5th Millennium*. International Series 241. Oxford: BAR.

Efstratiou, N. and N. Kallindzi. 1994. *Makri. Arhaiologikes Ereunes*. Tessaloniki: Ekdoseis Baniyas.

Ellis, E., 1984. *The Cucuteni-Tripolye Culture: A Study in Technology and the Origins of Complex Society*. International Series 217. Oxford: BAR.

Ercan, T., 1992. Trakya'daki Senozoyik Volkanizması ve Bölgesel Dağılımı. *Jeoloji Mühendisliği* 41: 37-50.

Erdoğan, B., 1995. The Matt-White Painted Pottery from Eastern Thrace: A new look at the relations between the Balkans and Anatolia. *Anatolian Studies* XL: 267-272.

Erdoğan, B., 1997. Edirne ili 1995 Yılı Yüzey Araştırması. *XIV. Araştırma Sonuçları Toplantısı I*, Ankara: 273-291.

Erdoğan, B., 1999a. 1997 Yılı Edirne ili Yüzey Araştırması. *XVI. Araştırma Sonuçları Toplantısı II*, Ankara: 345-358.

Erdoğan, B., 1999b. The Late Chalcolithic Pottery from the Sites of Kavaklı and Yumurta Tepe in the Province of Edirne, Eastern Thrace. *Proceedings of the Prehistoric Society* 65: 457-464.

Erdoğan, B., 1999c. Pattern and Mobility in the Prehistoric settlements of the Edirne Region, Eastern Thrace. *Documenta Praehistorica* XXVI: 143-151.

Erdoğan, B., 2000. Problems of Dating Prehistoric Axe Factories and Neolithisation in Turkish Thrace. *Documenta Praehistorica* XXVII: 155-166.

Ergin, M. and R. Güler. 1981. Hacettepe Üniversitesi Radyokarbon Laboratuvarında Yapılan Çalışmalar. İkiztepe C14 Tarihleri ve Diğer Bazı C14 Sonuçları. *Tübitak Arkeometri Ünitesi Bilimsel Toplantı Bildirileri II*: 79-93.

Erinç, S., 1954. The Pleistocene History of the Black Sea and Adjacent Countries with Special Reference to the Climatic Change. *Review of the Geographical Institute* I: 84-113.

Erzen, A., 1956. Sinop Kazısı 1953 yılı Çalışmaları. *Türk Arkeoloji Dergisi* 6: 69-72.

Esin, U., 1969. *Kuantitatif Spektral Analiz Yardımıyla Başlangıcından Asur Kolenileri Çağına kadar Bakır ve Tunç Madenciliği*. İstanbul: University of İstanbul.

Esin, U., 1992. İstanbul'un en eski buluntu yerleri ve kültürleri. In *Semavi Eyice Armağanı-İstanbul Yazıları* : 53-77. İstanbul: TTOK

- Esin, U., 1993. Gelveri-Ein Beispiel für die kulturellen Beziehungen zwischen Zentralanatolien und Südosteuropa während des Chalkolithikums. *Anatolica* XIX: 47-56.
- Evans, J and T. O'Conner. 1999. *Environmental Archaeology. Principles and Methods*. Gloucester: Shire Sutton.
- Falkenstein, A., 1965. Zu den Tontafeln aus Tartaria. *Germania* 43: 269-273.
- Felsch, R. C. S., 1988. *Das Kastro Tigani III: Die spatneolithische und chalcolithische Siedlung*. Bonn:Philipp von Zaber.
- Fewkes, V., 1936. Neolithic Sites in the Moravo-Danubian Area (Eastern Yugoslavia). *Bulletin of the American of Prehistoric Research* 12: 5-80.
- Flannery, K. V. (ed.). 1976. *The Early Mesoamerican Village*. London: Academic Press.
- Foard, G., 1978. Systematic fieldwalking and the investigation of Saxon settlement in Northamptonshire. *World Archaeology* 9 / 3 : 357-374.
- Fol, A., J. Lichardus, F. Bertemes and I. Karastev. 1987. Bericht über die bulgarisch-deutschen Ausgrabungen in Drama (1983-1988). *Bericht der Römisch-Germanischen Kommission* 70: 10-128.
- Foley, R., 1977. Space and energy: a method for analysing habitat value and utilization in relation to archaeological sites: 163-187. In. D. L. Clarke (ed.). *Spatial Archaeology*. New York: Academic Press.
- Foley, R., 1981a. *Off-site Archaeology and Human Adaptations in Eastern Africa*. International Series 97. Oxford: BAR.
- Foley, R., 1981b. Off-site Archaeology: An Alternative Approach for the short-sighted. In I. Hodder, G. Issac and N. Mammond (eds), *Pattern of the Past. Studies in Honour of David Clarke*. 157-183. Cambridge: Cambridge University Press.
- Francovich, R., H. Patterson and G. Barker (eds). 2000. *Extracting Meaning from Ploughsoil Assemblages*. The Archaeology of Mediterranean Landscapes 5. Oxford: Oxbow Books.

French, D., 1964. Surface Finds: Akbaş Şehitliği, Asartepe. *Anatolian Studies* 14: 36-37.

French, D., 1965a. Recent Archaeological Work in Turkey: Surface Finds from Various Sites. *Anatolian Studies* 15: 34-39.

French, D., 1965b. Early Pottery Sites from Western Anatolia. *Bulletin of the Institute of Archaeology* 5: 15-24.

French, D., 1966. Recent Archaeological Research in Turkey, Further Discoveries in Thrace. *Anatolian Studies* 16: 49-50.

French, D., 1967. Prehistoric sites in Northwest Anatolia I: Iznik Area. *Anatolian Studies* 17:49-100.

Gaffney, C., V. Gaffney and M. Tingle. 1985 . Settlement, Economy or Behaviour? Micro-regional Land Use Models and the Interpretation Surface Artefact Patterns. In C. Haselgrove, M. Millett and I. Smith (eds), *Archaeology from the Ploughsoil*. 95-107. Sheffield: University of Sheffield.

Gaffney, V. and M. Tingle. 1989. *The Maddie Farm Project*. British series 200. Oxford: BAR.

Gaffney, V., J. Bintliff and B. Slapsak. 1991. Site formation processes and Hvar Survey Project, Yugoslavia. In A.J. Scofield (eds), *Interprating Artefat Scatters : Contributions to Plouhzone Archaeology*: 59-80. Oxford:.Oxbow Books.

Gallis, K., 1987. Die stratigraphische Eiordnung der Larisa-Kultur: ein Richtigstellung. *Präehistorische Zeitschrift* 72: 147-163.

Gatsov, I. and M. Özdoğan. 1994. Some Epi-paleolithic Sites from Northwest Turkey: Ağaçlı, Domali, Gümüşdere. *Anatolica* XX: 97-120.

Gatsov, I., 1997. Preliminary Results from the Investigation on some Categories of Flint Artefacts from Dervishov Odzhak and Tsiganova Mogila. In K. Leshtakov (ed.), *Maritsa Project I*: 147-154. Sofia: Publishing House "Roads Agency" Ltd.

Gatsov, I., 1998. A Preliminary Report of the Chipped Stone Industry of Aşağı Pinar, Turkish Thrace. *Archaeologia Bulgarica* II / 3: 1-6.

Gatsov, I., 2000. Chipped Stone Assemblages from South Bulgaria and North-West Turkey (Epi-palaeolithic /Mesolithic and Neolithic Periods). In L. Nikolova (ed.), *Technology, Style and Society. Contributions to the Innovations between the Alps and the Black Sea in Prehistory*. International Series 854: 1-28. Oxford: BAR.

Gatsov, I., 2001. Epipalaeolithic / Mesolithic, Neolithic Periods Chipped-stone Assemblages from Southern Bulgaria and Northwest Turkey: Similarities and Differences. *TÜBA-AR* 4: 101-112.

Gaul, J., 1948. *The Neolithic Period in Bulgaria. Early food producing cultures of Eastern Europe*. Cambridge, Massachusetts: American School of Prehistoric Research 16.

Gebauer, B. A., 1995. Pottery Production and the Introduction of Agriculture in Southern Scandinavia. In W. K. Barnett and J. W. Hoopes (eds), *The Emergence of Pottery: Technology and Innovation in Ancient Societies*: 99-112. Washington DC: Smithsonian Institute Press.

Georgiev, G., 1961. Kultergruppen der Jungstein- und der kupferzeit in der Ebene von Thrazien (Sudbulgarien). In *L'Europe á la fin de l'áge de la Pierre*: 45-100. Praha: Académic Tchecoslovaque des Sciences.

Georgiev, G., 1965. The Azmak mound in Southern Bulgaria. *Antiquity* 3:6-8.

Georgiev, G., 1971. Die Entwicklung der älteren prähistorischen kulturen in Sudbulgarien. *Studia Balcanica* 5: 21-35.

Georgieva, P., 1988, Die prähistorische Siedlung in der Gegend Čukata beim Dorf Galatin bei Vraca (Bulgarien). *Studia Praehistorica* 9: 111-146.

Georgieva, P., 1990, Periodization of the Krivodol-Salcuta-Bubanj Culture. In D. Srejović and N. Tasić (eds), *Vinča and its World: International Symposium The Danubian Region from 6000 to 3000 B.C.*: 169-173. Belgrade: Serbian Academy of Sciences and Arts Centre for Archaeological Research.

Gibbon, G., 1984. *Anthropological Archaeology*. New York: Colombia University Press.

- Gimbutas, M. (ed.). 1976. *Neolithic Macedonia: as reflected by excavations at Anza*. Los Angeles: University of California, Institute of Archaeology.
- Gimbutas, M., 1982. *The Goddesses and Gods of Old Europe. 6500-3500 b.c. Myths and Cult Images*. 2nd edition. London: Thames and Hudson.
- Gimbutas, M., 1989. *The Language of the Goddess*. San Francisco: Harper and Collins.
- Gimbutas, M., 1991. *The Civilization of the Goddess: The World of Old Europe*. San Francisco: Harper Collins.
- Gimbutas, M., S. Winn and D. Shimabuku. 1989. *Achilleion: A Neolithic Settlement in Thessaly, Greece, 6400-5600 B.C.* Los Angeles: University of California, Institute of Archaeology.
- Göçmen, K., 1976. *Asağı Meriç Vadisi Taşkin Ovasi ve Deltanın Alüvyal Jeomorfolojisi*. Istanbul: IUCFY.
- Goring, E., 1991. The anthropomorphic figurines. In E. Peltenburg (ed.), *Lemba Archaeological Project II: A ceremonial area at Kissonerga*: 39-60. Studies in Mediterranean Archaeology LXX/3. Göteborg: Poul Astroms.
- Gorny, R. L., 1995. Review of Anatolia and the Balkans. *Biblical Archaeologist* 58: 52-54.
- Gorny, R. L., G. Mc Mahon, S. Paleg and L. Kealhofer. 1995. The Alişar Regional Project 1994. *Anatolica* XXI: 65-100.
- Gorny, R. L., G. McMahon, G. Paley and S. Steadman. 2000. The 1999 Alişar Regional Project Season. *Anatolica* XXVI: 153-171.
- Görsdorf, J. and J. Bajadziev. 1996. Zur absoluten Chronologie der bulgarischen Urgeschichte. *Eurasia Antiqua* 2: 105-173.
- Gosden, C., 1989. Debt, Production and Prehistory. *Journal of Anthropological Archaeology* 8: 355-389.
- Gould, R. A., 1968. Living Archaeology: the Ngatatjara of Western Australia. *Southwestern Journal of Anthropology* 24: 101-122.

Garašanin, M.V., 1956. Die Bestattungssitten im balkanisch-anatolischen Komplex der jüngeren Steinzeit. *Glasnik Zemaljskog Muzeja Sarajevo* XI: 205-236.

Garašanin, M.V., 1961. The Neolithic in Anatolia and the Balkans. *Antiquity* 35: 276-280.

Garašanin, M. V., 1998. Kulterströmungen im Neolithikum des südlichen Balkanraumes. *Prähistorische Zeitschrift* 73: 25-51.

Garašanin, M. V., 2000. Zum Begriff des Balkanisch-Anatolischen Komplexes des Späten Neolithikums. In S. Hiller and V. Nikolov (eds), *Karanovo III. Das Neolithikum in Südosteuropa*: 343-347. Wien: Phoibos Verlag.

Greig, A .R. J., and J. Turner. 1974. Some Pollen Diagrams from Greece and their Archaeological Significance. *Journal of Archaeological Science* 1: 177-194.

Gültekin, A. H., 1999. Şükrüpaşa sokulumu (Dereköy-Kirklareli) ile ilişkili Cu-Mo cevherlerinin jeolojik, mineralojik ve jeokimyasal özellikleri. *Türkiye Jeoloji Bülteni* 42/1: 29-45.

Gunterson C. G. and E. Özturgut. 1974. The Bosphorus. In E. T. Degens and D.A. Ross (eds), *The Black Sea - Geology, Chemistry and Biology*: 99-114. Menasha, Wisconsin: Collegiate Press.

Haaland, G. and R. Haaland. 1996. Levels of Meaning in Symbolic Objects. *Cambridge Archaeological Journal* 6/2: 295-300.

Halstead, P., 1993. 'Spondylus' shell ornaments from the Late Neolithic Dimini, Greece: specialised manufacture or unequal accumulation? *Antiquity* 67: 603-609.

Halstead, P., 1996. The development of agriculture and pastoralism in Greece: when, how, who and what? In D. R. Harris (ed.), *The Origins and Spread of Agriculture and Pastoralism in Eurasia*: 296-309. London: UCL Press.

Hamilton, N., 1996. The Personal is Political. *Cambridge Archaeological Journal* 6/2: 282-285.

Hampton, O. W., 1999. *Culture of Stone. Sacred and Profane Uses of Stone Among the Dani*. Texas: Texas A&M University Press.

Harmankaya, S., 1983. Pendik Kazisi 1981. IV. Kazi Sonuçlari Toplantisi: 25-30.

Harmankaya, S. and O. Tanindi. 1996. *Türkiye Arkeolojik Yerleşmeleri I: Paleolitik ve Epi-paleolitik*. Istanbul: Ege.

Harmankaya, S., O. Tanindi and M. Özbaşaran. 1997. *Türkiye Arkeolojik Yerleşmeleri II: Neolitik*. Istanbul: Ege.

Harmankaya, S., O. Tanindi and M. Özbaşaran.. 1998. *Türkiye Arkeolojik Yerleşmeleri III: Kalkolitik*. Istanbul: Ege.

Harmankaya, S., O. Tanindi and B. Erdoğan. 2001. *Türkiye Arkeolojik Yerleşmeleri IV: İlk Tunç*. Istanbul: Ege. (in press)

Harmankaya, S. and B. Erdoğan. 2001. Prehistoric Survey at Gökçeada, Turkey, in 1999. *University of Durham and Newcastle Upon Tyne Archaeological Reports* 1999-2000: 28-35.

Haselgrove, C., M. Millet and I. Smith (eds). 1985. *Archaeology from the Ploughsoil*. Sheffield: Sheffield University Press.

Hauptmann, H., and V. Miložčić. 1969. *Die Funde der frühen Dimini-Zeit aus der Arapi-Magula, Thessalien*. Bonn: Rudolf Habelt.

Hayes, P. P., 1991. Models for the distribution of pottery around former agricultural settlements. In A. J. Schofield (ed.), *Interpreting Artefact Scatters. Contributions to Ploughzone Archaeology*: 81-92. Oxford: Oxbow Books.

Helms, M. W., 1988. *Ulysses' Sail. An Ethnographic Odyssey of Power, Knowledge and Geographical Distance*. Princeton: Princeton University Press.

Hill, C. W., 1989. Who is what? A preliminary enquiry into cultural and physical identity. In S. Shennan (ed.), *Archaeological Approaches to Cultural Identity*: 233-241. London: Allen Unwin.

Hiller, S., and V. Nikolov. (eds). 1997. *Karanovo: Die Ausgrabungen im Südsektor 1984-1992*. Salzburg-Sofia: Berger and Söhne.

Hodder, I., 1979. Social Economic Stress and Material Culture Patterning. *American Antiquity* 44: 446-454.

Hodder, I., 1982a. Towards a contextual approach to prehistoric exchange. In J. Ericson and T. Earle (eds), *Context for Prehistoric Exchange* : 199-211. New York: Academic Press.

Hodder, I., 1982b. *Symbols in Action*. Cambridge: Cambridge University Press.

Hodder, I., (ed.). 1982c. *Structural and Symbolic Archaeology*. Cambridge: Cambridge University Press.

Hodder, I., 1986. *Reading the Past. Current Approaches to Interpretation in Archaeology*. Cambridge: Cambridge University Press.

Hodder, I and C. Orton. 1976. *Spatial Analysis in Archaeology*. Cambridge: Cambridge University Press.

Hodder, I. and C. Malone. 1984. Intensive Survey of the Prehistoric Sites in the Stilo region, Calabria. *Proceedings of the Prehistoric Society* 50: 121-150.

Hole, F. and R. F. Heizer 1965. *An Introduction to Prehistoric Archaeology*. New York: Holt, Rinehart and Winston.

Holmberg, E., 1964a. *Neolithic Pottery of Mainland Greece*. Göteborg: Elanders Boktryckeri Aktiebolag.

Holmberg, E., 1964b. The appearance of Neolithic black burnished ware in mainland Greece. *American Journal of Archaeology* 63: 343-348.

Hood, M. S. F., 1967. The Tărtăria Tablets. *Antiquity* 41: 99-113.

Hood, S., 1981. *Excavation in Chios 1938-1955. Prehistoric Emporio and Ayio Gala*. London: The British School of Archaeology at Athens.

Huntley, B., 1990. European post-glacial forests: compositional changes in response to climatic change. *Journal of Vegetation Science* 1: 507-518.

Inizan, M., M. Reduron, H. Roche and J. Tixier. 1995. *Technologie de la pierre taillée*. Meudon: CREP.

Ingold, T., 1990. Society, nature and the concept of technology. *Archaeological review from Cambridge* 9/1: 5-17.

Ivanov, I., 1989. Le necropole chalcolithique de Varna et les cités lacustres voisines. In *Le Premier Or de l'humanité en Bulgarie 5ème millénaire*: 30-33. Paris: Réunion des Musées nationaux.

Jacobs, K., 1995. Returning to Oleni' ostrov: Social, Economic and Skeletal Dimensions of a Boreal Forest Mesolithic Cemetery. *Journal of Anthropological Archaeology* 14: 359-403.

Johnson, G. A., 1972. A test of the utility of Central Place Theory in archaeology. In P. J. Ucko, R. Tringham and G. W. Dimbleby (eds), *Man, Settlement and Urbanism* : 769-785. London: Duckworth.

Johnson, G. A., 1977. Aspects of Regional Analysis in Archaeology. *Annual Reviews of Anthropology* 6: 479-508.

Jovanović, B., 1976. Rudna Glava - ein kupferbergwerk des frühen Eneolithikums in Ostserbien. *Der Anschnitt* 28: 150-157.

Judge, J. W., J. I. Ebert and R. K. Hitchcock. 1975. Sampling in Regional Archaeological Survey. In J. W. Mueller (ed.), *Sampling in Archaeology* : 82-123. Tucson, Arizona: The University of Arizona Press.

Kanceva, T., 1992. Spätneolithische Kunstwerke im Museum von Nova Zagora. *Studia Praehistorica* 11-12: 74-86.

Kanchev, M. and T. Kancheva. 1988. Pozdneneoliticheskoe poselenie "Khlebozavoda" u goroda Nova Zagora. *Studia Praehistorica* 9: 68-83.

Kansu, Ş. A., 1963. Marmara Bölgesi ve Trakya'da Prehistoric Iskan Tarihi Bakimından Araştırmalar. *Belleten* XXVII,: 657-671.

Kansu, Ş. A., 1972. Yarımburgaz (Küçük Çekmece - İstanbul) Mağrasında TTK Adına Yapılan Prehistorya Araştırmaları ve Tuzla Kalkolitiğinde Yeni Gözlemler VII. *Türk Tarih Kurumu Kongresi 1970 / 1* : 22-31.

Kantarci, D., 1974. Trakya Orman Sahalarının Tabii Ağaç ve Çalı Türlerine Göre Bölgesel Sınıflandırılması. *Güney-Doğu Avrupa Araştırmaları Dergisi* 2-3: 283-314.

Kaplan, F. S. and D. M. Levine. 1981. Cognitive mapping of a folk taxonomy of Mexican pottery: A multivariate approach. *American Archaeologist* 83/3: 868-884.

Keller, D. R. and D. W. Rupp (eds). 1983. *Archaeological Survey in the Mediterranean Area*. International Series 155. Oxford: BAR.

Kelly, R. L., 1992. Mobility / Sedentism: Concepts, Archaeological Measures and Effects. *Annual Review of Anthropology* 21 : 43-66.

Kent, S., 1989. Cross-Cultural perceptions of farmers as hunters and the value of meat. In S. Kent (ed.), *Farmers as Hunters: The Implication of Sedentism*: 2-17. Cambridge: Cambridge University Press.

Kerr, R.A., 1998. Black Sea Deluge May Have Helped Spread Farming. *Science* 279: 1132.

Kingery, W. D and J. D. Frierman. 1974. The firing temperature of a Karanovo sherd and inferences about South-East European Chalcolithic refractory technology. *Proceedings of the Prehistoric Society* 40: 204-205.

Kipfer, B. A., 2000. *Encyclopaedic Dictionary of Archaeology*. New York: Kluwer Academic / Plenum Publishers.

Klejn, L. S., 1982. *Archaeological Typology*. International series 153. Oxford: BAR.

Korfmann, M., 1985. Besik-Tepe. Vorbericht über die Ergebnisse der Grabung von 1983. *Archaeologischer Anzeiger* 1985/2: 157-194.

Korfmann, M. and B. Kromer. 1993. Demircihüyük, Beşik-Tepe, Troia - eine zwischen Bilanz zur Chronologie dreier orte in Westanatolien. *Studia Troica* 3: 135-171.

Korfmann, M., Ç. Girgin, Ç. Morçöl and S. Kiliç. 1995. Kumtepe 1993: Report on the rescue excavation. *Studia Troica* 5: 237-289.

Koşay, H. Z. and M. Akok. 1957. *Büyük Güllücek Kazisi, 1947 ve 1949*. Ankara: TTKY.

Koşay, H. Z. and M. Akok. 1966. *Alaca Höyük Kazisi 1940-48 deki Çalışmalara ve Kesiflere ait ilk Rapor*. Ankara: TTKY.

Koşay, H. Z., 1963. Alaca Höyük ve Büyük Güllücek Buluntularına Göre Anadolu ve Balkanlar Prehistuvary Arasındaki Identite ve Diversiteler. *Belleten* XXVII: 297-304.

Kökten, K., N. Özgüç and T. Özgüç. 1945. 1940 ve 1941 Yilinda Türk Tarih Kurumu adına Yapılan Samsun Bölgesi Kazıları Hakkında İlk Kısa Rapor. *Belleten* IX: 361-400.

Kristiansen K., 1984. Ideology and Material Culture: an Archaeological Perspective. In M. Spriggs (ed.), *Marxist Perspectives in Archaeology*: 72-100. Cambridge: Cambridge University Press.

Kurter, A., 1978. Istranca (Yıldız) Dağlarının Temel, Yapısal ve Jeomorfolojik Özellikleri: Yeni görüşlerin Işığında I. *Güney-Doğu Avrupa Arastırmaları Dergisi* 6-7: 1-26.

Kurtoğlu, F., 1938. *Gelibolu Yöresi Tarihi*. İstanbul: Edirne ve Yöresi Eskieserleri sevenler kurumu yayınları 3.

Lamb, H. H., 1982. Reconstruction of the course of post glacial climate over the world. In A. Harding (ed.), *Climatic Change in Later Pre-History*: 11-32. Edinburgh: Edinburgh University Press.

Lamb, W., 1932. Schliemann's Prehistoric Sites in the Troad. *Prähistorische Zeitschrift* 23: 111-131.

Lamb, W., 1949. New Developments in Early Anatolian Archaeology. *Iraq* XI: 188-201.

Lazarova, M., I. Stefanova. 1997. A palaeobotanical investigation in Harmanli region. In K. Leshtakov (ed.). *Maritsa Project I: Rescue Archaeological Excavations Along Maritsa Motorway in South Bulgaria*: 243-244. Sofia: Publication house "roads agency ltd."

Leach, J. W. and E. Leach (eds). 1983. *The Kula. New Perspective on Massim Exchange*. Cambridge: Cambridge University Press.

Leroi-Gourhan, A., 1964. *Le geste et la parole I: technique et langage*. Paris: Albin Michel.

Leshtakov, K. (ed.). 1997. *Maritsa Project I: Rescue Archaeological Excavations Along Maritsa Motorway in South Bulgaria*. Sofia: Publication house "Roads Agency Ltd."

Leshtakov, K., 1999. New data for the Karanovo III-IV sites in the Maritsa Valley and the Western Sakar Region. In S. Hiller and V. Nikolov (eds), *Karanovo III. Das Neolithikum in Südosteuropa*: 141-154. Wien: Phoibos Verlag.

Lichardus, J., 1993. Die Eustehung des mittleren Neolithikums an der unteren Tundža (Südostbulgarien). *Anatolica* XIX: 85-98.

Lichardus, J., A. Fol, L. Getev, F. Bertemés, R. Echt, R. Katinčarov and I.K. Iliev. 2000. *Drama 1983-1999: Forschungen in der Mikroregion*. Bonn: Dr. Rudolf Habelt GMBH.

Lichardus, J., I. Gatsov, M. Gurova and I.K. Iliev. 2000. Geometric microliths from the Middle Neolithic site of Drama-Gerena (South-East Bulgaria) and the problem of Mesolithic tradition in South-Eastern Europe. *Eurasia Antiqua* 6: 1-12.

Lloyd, S. and J. Mellaart. 1962. *Beycesultan I. The Chalcolithic and Early Bronze Age Levels*. London: The British Institute of Archaeology at Ankara.

Lösch, A., 1954. *The Economics of Location*. New Haven: Yale University Press.

Macklin, M. G., J. Lewin and J. C. Woodward. 1995. Quaternary fluvial systems in the Mediterranean basin: 1-25. In J. Lewin, M.G. Macklin and J. C. Woodward (eds), *Mediterranean Quaternary River Environments*. Rotterdam: A.A. Balkema.

Makkay, J., 1969. The late Neolithic Tordos group of signs. *Alba Regia* X: 9-50.

- Makkay, J., 1993. Pottery Links Between Late Neolithic Cultures of the North Western Pontic and Anatolia, and the Origins of the Hittites. *Anatolica* XIX: 117-128.
- Malinowski, B., 1922. *Argonauts of the Western Pacific*. London: Routledge.
- Macready, S. and H. Thompson (eds). 1985. *Archaeological field survey in Britain and Abroad*. London: Society of Antiquaries Occasional Paper 6.
- Manolakakis, L., 1996. Production Lithique et émergence de la hiérarchie Sociale: l'industrie lithique de l'énéolithique en Bulgarie (première moitié du IVe millénaire). *Bulletin de la Société Préhistorique Française* 93 (1): 119-123.
- Mansel, A. M., 1938. *Trakya'nin Kültür ve Tarihi*. Istanbul: Edirne ve Yöresi Eski Eserleri Sevenler Kurumu yay. 3.
- Mantu, C-M., 1998. *Cultură Cucuteni. Evoluția Cronologia Legaturi*. Piatra-Neamț: Muzeul de Istorie Piatra Neamț.
- Marinescu-Bâlcu, S., 1974. *Cultura Precucuteni. Pe Teritoriul Romaniei*. București: EARSR.
- Marinescu-Bâlcu, S., 1981. *Tîrpești: From Prehistory to History in Eastern Romania*. International Series 107. Oxford:BAR.
- Mattingly, D., 2000. Methods of collection, recording and quantification. In R. Francovich, H. Patterson and G. Barker (eds), *Extracting Meaning from Ploughsoil Assemblages*: 5-15. The Archaeology of Mediterranean Landscapes 5. Oxford: Oxbow Books.
- Mauss, M. G., 1925. *The Gift*. London: Routledge.
- McBryde, I., 1984. Kulin greenstone quarries: the social contexts of production and distribution for the Mt. William site. *World Archaeology* 16/2: 267-285.
- Mellaart, J., 1955. Some Prehistoric Sites in Northwestern Anatolia. *Istanbul Mitteilungen* 6: 53-88.
- Mellaart, J., 1960. Anatolia and the Balkans. *Antiquity* 34: 270-278.

Mellaart, J., 1967. Anatolia before c. 4000 B.C. and c. 2300-1750 B.C. In *Cambridge Ancient History*, Vol I / 1-2. Cambridge: 304-326 and 601-706.

Mellaart, J., 1970. *Excavations at Hacilar I-II*. Edinburgh: Edinburgh University Press.

Mellaart, J., 1975. *The Neolithic of the Near East*. London: Thames and Hudson.

Meriç, E., 1995. *Quaternary Sequence in the Gulf of Izmit*: 349-351. Izmit: Harp Okulu Komutanligi Basim Evi.

Meriç, R., 1993. Pre-Bronze Age Settlements of West-Central Anatolia (an extended abstract). *Anatolica* XIX: 143-150.

Meskeel, L., 1995. Goddesses, Gimbutas and "New Age" Archaeology. *Antiquity* 69: 74-86.

Mikami, T., 1992. A preliminary report on the archaeological survey in Central Anatolia. (in Japanese): 195-223. *Kamankale I*. Tokyo: University of Tokyo.

Mikov, V., 1939. Selishtnata mogila ot bronzovata epoha do s. Vesselinovo. *Izv. Arh. Inst.* 13: 195-226.

Mikov, V., 1948. Predistoriceskoto seliste do Krivodol (La Station énéolithique de Krivodol). *Razkopki i Proucvanja* 1: 26-62.

Mikov, V., 1959. The Prehistoric mound of Karanovo. *Archaeology* 12/2: 88-97.

Mills, B. J., 1999. Ceramics and the Social Contexts of Food Consumption in the Northern Southwest. In J. M. Skibo and G. M. Feinman (eds), *Pottery and People: a dynamic interaction*: 99-114. Salt Lake City: The University of Utah Press.

Milojčić, V., 1949. *Chronologie der Jüngerer Steinzeit Mittel-und Südost Europeans*. Berlin: Mann.

Milojčić, V., 1956. Die erste praekeramische bauerliche Siedlung der Jungsteinzeit in Europa. *Germania* 34, 3/4: 208-210.

Milojčić, V., 1960. *Hauptergebnisse der deutschen Ausgrabungen in Thessalien, 1953-1958*. Bonn: Rudolf Habelt.

Milojčić, V., 1965. Die Tontafeln von Tartăria (Siebenbürgen) und die absolute Chronologie des mitteleuropäischen Neolithikums. *Germania* 43: 261-268.

Mirtchev, M., 1960. Le Tell de Sava. *Bulletin de la Societe Archéologique à Varna* XI: 1-26.

Monah, D., 1997. *Plastica Antropomorfă a Culturii Cucuteni-Tripolie*. Piatra Neamț: Muzeul de Istorie Piatra Neamț.

Mueller, J. W. (ed.). 1975. *Sampling in Archaeology*. Tucson, Arizona: The University of Arizona Press.

Müller-Karpe, H., 1968. *Handbuch der Vorgeschichte II*. München: C.H. Beck.

Murray, P., 1980. Discard Location: The Ethnographic Data. *American Antiquity* 45/3: 490-502.

Nandris, J., 1970. The Development and Relationships of the Earlier Greek Neolithic. *MAN* 5: 192-213.

Needham, S. P and T. Spence. 1997. Refuse and the formation of middens. *Antiquity* 71: 77-90.

Nelson, B. A., 1981. Ethnoarchaeology and Palaeodemography: A test of Turner and Lofgren's hypothesis. *Journal of Anthropological Research* 37: 107-129.

Némeskeri, J. and I. Lengyel. 1976. Neolithic Skeletal Finds. In M. Gimbutas (ed.), *Neolithic Macedonia: as reflected by excavations at Anza*: 375-410. Los Angeles: University of California, Institute of Archaeology.

Neústupný, E., 1991. Community areas of prehistoric farmers in Bohemia. *Antiquity* 65: 326-331.

Neústupný, E., 1998. *Space in Prehistoric Bohemia*. Praha: Institute of Archaeology.

Nikolov, V., 1992. Mittelneolithische keramik aus Karanovo typologische Charakteristik. *Balkanica* 23: 121-131.

Nikolov, V., 1993. Die Neolithischen Kulturen Karanovo I, II und III im Kontext ihrer Beziehungen zu Anatolien. *Anatolica* XIX: 167-172.

Nikolov, V., 1994. Notes to Periodization and Chronology of Neolithic in Bulgaria. *Yearbook of Department of Archaeology-NBU* I: 255-262.

Nikolov, V., 1995. Deux habitations et leurs complexes céramiques de la couche Karanovo III, dans le tell Karanovo. *Arkeologia* 38/4: 19-26.

Nikolov, V., 1998a. *Prauchvanija vurhu Neolitnata keramika v Trakija*. Sofia: AGATO.

Nikolov, V., 1998b. The Circum Pontic Cultural Zone During the 6th Millennium B.C. *Documenta Praehistorica* XXV: 81-89.

Nikolov, V., 2000. Tell Karanovo: Cultural and Chronological Differentiation of the Neolithic Layers. *Thracia* 13: 319-324.

O'Shea, J and M. Zvelebil. 1984. Oleneostrovski mogilnik: Reconstructing the social and economic organization of Prehistoric Foragers in Northern Russia. *Journal of Anthropological Archaeology* 3: 1-40.

Oakes, H., 1958. *Türkiye Topraklari*. Izmir: Ege Universitesi.

Ohnemus, S., 1998. *An Ethnology of the Admiralty Islanders*. Bathurst: Crawford House.

Omura, S., 1992. 1990 Yili Orta Anadolu'da Yürütülen Yüzey Araştırmaları. IX. *Araştırma Sonuçları Toplantısı*, Ankara: 541-560.

Omura, S., 1993. 1991 Yili İç Anadolu'da Yürütülen Yüzey Araştırmaları. X. *Araştırma Sonuçları Toplantısı*, Ankara: 365-386.

Orthmann, W., 1963. *Die Keramik der frühen Bronzezeit aus Inneranatolien*. Berlin:Gebr. Mann.

Özbek, O., 2000. A Prehistoric Stone Axe Production Site in Turkish Thrace: Hamaylitarla. *Documenta Praehistorica* XXVII: 167-171.

Özbek, O and K. Erol. (in press). Étude pétrographique des haches polies du Hamylitarla et Fener-Karadutlar (Turquie). *Anatolia Antiqua*.

Özdoğan, A., 1999. Çayönü. In M. Özdoğan and N. Başgelen (eds.) *Neolithic in Turkey: The Cradle of Civilization* : 35-63. Istanbul: Arkeoloji ve Sanat.

Özdoğan, A. and M. A. Işin. 1999. Tekirdağ Menekşe Çatağı Kazıları 1997 yılı Çalışmaları. XX. *Kazi Sonuçları Toplantısı I*, Ankara: 295-310.

Özdoğan, A. and M. A. Işin. 2000. Tekirdağ Menekşe Çatağı Kazıları 1998 yılı Çalışmaları. 21. *Kazi Sonuçları Toplantısı I*, Ankara: 239-250.

Özdoğan, M., 1982a. Doğu Marmara ve Trakya Bölgesi Araştırmaları. *Türk Arkeoloji Dergisi* XXVI / 1: 37-61.

Özdoğan, M., 1982b. Tilki burnu: a Late Chalcolithic Site in Eastern Thrace. *Anatolica* IX: 1-26.

Özdoğan, M., 1983a. Surface Survey for Prehistoric and Early Historic Sites in Northwestern Turkey. In D. R. Keller and D. W. Rupp (eds), *Archaeological Survey in the Mediterranean Area*. International Series 115 : 303-305. Oxford: BAR.

Özdoğan, M., 1983b. Trakya ve Doğu Marmara Araştırmaları 1981 yılı Çalışmaları. IV. *Kazi Sonuçları Toplantısı*, Ankara: 137-140.

Özdoğan, M., 1983c. Pendik: a Neolithic site of Fikirtepe Culture in the Marmara Region. In R.M. Boehmer and H. Hauptmann (eds), *Beiträge zur Altertums-kunde Kleisasien, Festschrift für Kurt Bittel*: 401-411. Mainz: Philipp von Zabern.

Özdoğan, M., 1984. Doğu Marmara ve Trakya Araştırmaları 1982. I. *Araştırma Sonuçları Toplantısı*. Ankara: 63-68.

Özdoğan, M., 1985a. A Surface Survey for Prehistoric and Early Historic Sites in Northwestern Turkey. *National Geographic Research for 1979*: 517-541. Washington: National Geographic.

Özdoğan, M., 1985b. Marmara Bölgesinde Kültür Tarihi ile ilgili Bazi Sorunlar ve Bunların Çözümlemesinde Jeomorfoloji Araştırmalarının Katkisi. *Arkeometri Toplantısı Sonuçları I*, Ankara: 39-62.

Özdoğan, M., 1986a. Prehistoric Sites in the Gelibolu Peninsula. *Anadolu Araştırmaları X*: 51-66

Özdoğan, M., 1986b. 1984 yılı Trakya ve Doğu Marmara Araştırmaları. *III. Araştırma Sonuçları Toplantısı*, Ankara: 409-420.

Özdoğan, M., 1988. 1986 yılı Trakya ve Marmara Bölgesi Araştırmaları. *V. Araştırma Sonuçları Toplantısı*. Ankara: 157-169.

Özdoğan, M., 1989. Neolithic Cultures of Northwestern Turkey. In S.Bökönyi (ed.), *Neolithic of Southeastern Europe and its Near Eastern Connections*. Varia Archaeologica Hungarica II: 201-215. Budapest: Institute of Archaeology of the Hungarian Academy of Sciences.

Özdoğan, M., 1990. 1989 yılı Marmara Bölgesi Araştırmaları ve Toptepe Kurtarma Kazisi. *XII. Kazı Sonuçları Toplantısı I*. Ankara: 345-376.

Özdoğan, M., 1991. Marmara Bölgesi-Balkanlar-Orta Anadolu Arasındaki Kronoloji Sorununa Yeni Bir Yaklaşım. *Türk Tarih Kurumu Kongresi XI* : 69-79.

Özdoğan, M., 1993a. Vinča and Anatolia: a new look at a very old problem. *Anatolica XIX*:173-193.

Özdoğan, M., 1993b. The Second Millennium of the Marmara Region: the Perspective of a Prehistorian on a Controversial Historical Issue. *Istanbul Mitteilungen* 43: 151-163.

Özdoğan, M., 1995. Neolithic in Turkey. The Status of Research. *Readings in Prehistory. Studies Presented to Halet Çambel*. Istanbul: Graphis.

Özdoğan, M., 1996a. Pre-Bronze Age Sequence of Central Anatolia: An Alternative Approach. In U. Mangen and M. Rashad (eds), *Thomas Beran zu Ehren*: 185-202. Münster: Ugarit Verlag.

Özdoğan, M., 1996b. Obsidian in Anatolia: An Archaeological Perspective on the Status of Research. In S. Demirci, A.M. Özer and G. D. Summers (eds), *Archaeometry 94. The Proceedings of the 29th International Symposium on Archaeometry*: 423-431. Ankara: Tübitak.

Özdoğan, M., 1997. The Beginning of Neolithic Economies in Southeastern Europe: An Anatolian Prespective. *Journal of European Archaeology* 5/2 : 1-33.

Özdoğan, M., 1998a. Tarihöncesi Dönemlerde Anadolu ile Balkanlar Arasındaki Kültür İlişkileri ve Trakya'da Yapılan Yeni Kazi Çalışmaları. *TÜBA-AR* 1: 63-93.

Özdoğan, M., 1998b. Hoca Çesme: An early Neolithic Anatolian colony in the Balkans?. In P. Anreiter, L. Bartosiewicz, E. Jerem and W. Meid (eds), *Man and the Animal World. Studies in Archaeozoology, Anthropology and Palaeolinguistics in Memoriam Sandor Bökönyi*: 435-451. Budapest: Archaeolingua.

Özdoğan, M., 1999a. Anadolu'dan Avrupa'ya Açılan Kapi: Trakya. *Arkeoloji ve Sanat* 90: 2-28.

Özdoğan, M., 1999b. Northwestern Turkey: Neolithic Cultures in Between the Balkans and Anatolia. In M. Özdoğan and N. Başgelen (eds), *Neolithic in Turkey. The Cradle of Civilization* : 203-224. Istanbul: Arkeoloji ve Sanat.

Özdoğan, M., (in press). The Black Sea, The Sea of Marmara and Bronze Age Archaeology. An Archaeological Predicament. *H. Todorova Festschrift*.

Özdoğan, M. and N. Özbaşaran-Dede 1990. 1989 Yılı Töptepe Kurtarma Kazisi. *Arkeoloji ve Sanat* 46/49: 2-23.

Özdoğan, M., Y. Miyake and N. Özbaşaran-Dede 1991. An Interim Report on the Excavations at Yarımburgaz and Töptepe in Eastern Thrace. *Anatolica* XVII : 59-121

Özdoğan, M., H. Parzinger and N. Karul 1997. Kırklareli Kazıları (Aşağı Pınar and Kanlıgeçit Höyükleri). *Arkeoloji ve Sanat* 77: 2-11.

Özdoğan, M. and I. Gatsov. 1998. Aceramic Neolithic Period in Western Turkey and in the Aegean, *Anatolica* XXVI: 209-232.

Özsait, M., 2001. Appendix: A Surface Collection From Pelitler Near Akşehir / Konya. In T. Efe (ed.), *The Salvage Excavations at Orman Fidanlığı. A Chalcolithic Site in Inland Northwestern Anatolia*: 212-223. Istanbul: Ege.

Parkes, D. and N. Thrift. 1980. *Times, Spaces and Places. A Chronogeographic Perspective*. Chichester: J.Wiley.

Parzinger, H., 1993. *Studien zud Chronologie und Kulturgeschichte der Jungstein - Kupfer - und Frühbronzezeit zwischen Karpaten und Mittlerem Taurus*. 2 vols. Frankfurt: Philipp von Zabern.

Parzinger, H. and M. Özdoğan. 1995. Die Ausgrabungen in Kirklareli (Türkisch-Thrakien) und ihre Bedeutung für die Kulturbeziehungen zwischen Anatolien und dem Balkan vom Neolithikum bis zur Frühbronzezeit. *Bericht der Römisch-Germanischen Kommission* 76 : 5-29.

Pasinli, A., E. Uzunoğlu, N. Atakan, Ç Girgin and M. Soysal. 1994. Pendik Kurtarma Kazisi. IV. *Müze Kurtarma Kazilari Semineri*, Ankara: 147-163.

Patton, M., 1991. Axes, Man and Women: Symbolic Dimensions of Neolithic Exchange in Armorica (north-west France). In P. Garwood, P. Jennings, R. Skeates and J. Toms (eds), *Sacred and Profane*: 65-79. Oxford: Oxbow Books.

Payne, S., 1985. Zoo-archaeology in Greece: a reader's guide. In N. C. Wilkie and D. E. Coulson (eds), *Contributions to Aegean Archaeology Studies in Honor of William A. McDonald* : 211-244. Minneapolis: University of Minnesota.

Paynter, R. W., 1983. Expanding the Scope of Settlement Analysis. In J. A. Moore and A. S. Keene (eds), *Archaeological Hammers and Theories*: 233-273. New York: Academic Press.

Pélégryn, J., 1990. Prehistoric lithic technology: some aspects of research. *Archaeological review from Cambridge* 9/1: 116-125.

Perlès, C., 1990. *Excavations at Franchthi Cave, Greece, fascicle 5: les industries lithiques taillées de Franchthi, 2: les industries du mésolithique et du néolithique initial*. Bloomington: Indiana University Press.

Pernicka, E., F. Begemann, S. Schmitt-Strecker and G. A. Wagner. 1993. Eneolithic and Early Bronze Age Copper Artefacts from the Balkans and their Relation to Serbian Copper Ores. *Prähistorische Zeitschrift* 68 (1): 1-54.

Persons, E. C. 1919. Increase by Magic: A Zuni Pattern. *American Anthropologist* 21: 272-286.

Pétrequin, A.M. and P. Pétrequin. 1994. *Écologie d'un outil: la hache de pierre polie en Irian Jaya (Indonesie)*. Paris: CNRS.

Pétrequin, P., A. M. Pétrequin, F. Jeudy, C. Jeunesse, J. Monnier, J. Pélégryn and I. Praud. 1998. From the Raw Material to the Neolithic Stone Axe. Production Processes and Social Context. In M. Edmonds and C. Richards (eds), *Understanding the Neolithic of North-Western Europe*: 277-311. Glasgow: Cruithne Press.

Plog, F. and J. N. Hill. 1971. Explaining Variability in the Distribution of sites. In G. J. Gumerman. (ed.), *The Distribution of Prehistoric Population Aggregates*: 7-36. Proceedings of the Southwestern Anthropological Research Group. Prescott, Arizona: Prescott College Anthropological Reports 1.

Plog, S., F. Plog and W. Wait. 1978. Decision Making in Modern Surveys. *Advances in Archaeological Method and Theory* 1: 383-421.

Polanyi, K., 1957. The economy as instituted process. In K. Polanyi, M. Arensberg and H. Pearson (eds), *Trade and Market in the Early Empires*. Glencoe, Illinois: Free Press.

Popova, N.T., and E. Božilova. 1992. The role of the Balkan Peninsula as a Linkage Between Asia Minor and Middle Europe in the Spreading of Early Agriculture. *Annuaire de L'Universite de Sofia 'St. Kliment Ohridski' Faculte de Biologie* 83: 17-25.

Popović, V., 1965. Une Civilisation égéo-orientale sur le moyen Danube. *Révue Archeologie* 2: 1-56.

Price, T. D., 1983. The European Mesolithic. *American Antiquity* 48 (4): 761-778.

Price, T. D., 1985. The Mesolithic of Western Europe. *Journal of World Prehistory* 1/3: 225-305.

Prinz B. 1988. The Ground Stone Industry from Divostin. In A. Mc Pherron and D. Srejović (eds), *Divostin and the Neolithic of Central Serbia*: 255-300. Pittsburgh: The Pittsburg University, Department of Anthropology.

Pyke, G. and P. Yiouni. 1996. *Nea Nikomedeia I: The Excavations and Ceramic Assemblage*. London: The British School at Athens.

Radovanović, I., 1996. *The Iron Gates Mesolithic*. Michigan: Prehistory Press.

Radunčeva, A., 1974. Certains Observations sur la Plastique Anthropomorphe de L'ère Énéolithique. *Izvestia na Arkheologicheskia Institut Sofia* XXIX: 21-41.

Radunčeva, A., 1976. *Vinica. Eneolitno selišče i nekropol*. Sofia: L'academic Bulgare des sciences.

Radunčeva, C., 1989. La société dans les Balkans à l'âge du cuivre. *Dossiers Histoire et Archéologie* 137: 46-55.

Redman, C. L., and P. J. Watson. 1970. Systematic intensive surface collection. *American Antiquity* 35: 279-291.

Relf, E. 1983. *Place and Placelessness*. London: Dion.

Renfrew, C., 1972. *The Emergence of Civilization*. London: Methuen.

Renfrew, C., 1973. *Before Civilization: The Radiocarbon Revolution and Prehistoric Europe*. London: Jonathan Cape.

Renfrew, C., 1979. *Problems in European Prehistory*. Cambridge: Cambridge University Press.

Renfrew, C., 1984. *Approaches to Social Archaeology*. Edinburgh: Edinburgh University Press.

Renfrew, C., 1986. Varna and the emergence of wealth in prehistoric Europe. In A. Appadurai (ed.), *The Social Life of Things*: 141-168. Cambridge: Cambridge University press.

Renfrew, C., 1987. *Archaeology and Language. The puzzle of Indo-European origins*. London: Jonathan Cape.

Renfrew, C., and E. V. Level. 1979. Exploring dominance: predicting polities from centers. In C. Renfrew and K. L. Cooke (eds), *Transformations. Mathematical Approaches to Culture Change*: 145-167. New York and London: Academic Press.

Renfrew, C., and T. Poston. 1979. Discontinuities in the endogenous change of settlement patterns. In C. Renfrew and K. L. Cooke (eds), *Transformations. Mathematical Approaches to Culture Change*: 145-167. New York and London: Academic Press.

Renfrew, C. and M. Wagstaff (eds). 1982. *An Island Polity: the Archaeology of Exploitation in Melos*. Cambridge: Cambridge University Press.

Renfrew, C., M. Gimbutas and E. S. Elster. 1986. *Excavation at Sitagroi. A prehistoric Village in Northeast Greece*. Los Angeles: University of California.

Renfrew, C. and P. Bahn. 2000. *Archaeology: Theories, Methods and Practice*. Third edition. London: Thames and Hudson.

Rice, P. R., 1987. *Pottery Analysis: A Sourcebook*. Chicago: University of Chicago.

Richards, A. I., 1956. *Chisungu: A Grils' Initiation Ceremony Among the Bemba of Northern Rhodesia*. London: Faber and Faber.

Roche, J., 1989. Spatial Organisation in the Mesolithic sites of Muge, Portugal. In C. Bonsall (ed.), *The Mesolithic in Europe: Papers presented at the 3th International Symposium*: 607-613. Edinburgh: Edinburgh University Press.

Rodden, R. J., 1964. Recent Discoveries from Prehistoric Macedonia. *Balkan Studies* 5: 109-124.

Roodenberg, J. J., 1993. Ilipinar X to VI: Links and Chronology. *Anatolica* XIX: 251-267.

Roodenberg, J. J. (ed.). 1995. *The Ilipinar Excavations I: five seasons of field work in NW Anatolia 1987-91*. Istanbul: Nederlands historisch-archaeologisch Instituut.

Roodenberg, J. J., 1999a. Investigations at Mentese Höyük in the Yenisehir Basin (1996-97). *Anatolica* XXV: 21-36.

Roodenberg, J. J., 1999b. Ilipinar, an Early Farming Village in the Iznik Lake Basin. In M. Özdoğan and N. Başgelen (eds), *Neolithic in Turkey. The Cradle of Civilization*: 193-201. Istanbul: Arkeoloji ve Sanat.

Roodenberg, J. J., L. Thissen and H. Buitenhuis. 1989-90. Preliminary Report on the Archaeological Investigations at Ilipinar in Northwestern Anatolia. *Anatolica* XVI: 61-144.

Roodenberg, J. J. and L. Thissen (eds). (in press). *The Ilipinar Excavations II*. Istanbul: Nederlands historisch-archaeologisch Instituut.

Roper, D. C., 1976. Lateral displacement of artefacts due to plowing. *American Antiquity* 41:372-375.

Roper, D.C., 1979. The Method and Theory of Site Catchment Analysis: a review. *Advances in Archaeological Method and Theory* 2: 119-140.

Rowley-Conwy, P., 1993. Cemeteries, seasonality and complexity in the Ertebølle of Southern Scandinavia. *University of Durham and Newcastle upon Tyne Archaeological Reports 1992* : 1-5.

Ryan W. B. F., W. C. Pitman, C. O. Major, K. Shimkus, V. Moskalenko, G. A. Jones, P. Dimitrov, N. Görür, M. Sakiç and H. Yüce. 1997. An abrupt drowning of the Black Sea shelf. *Marine Geology* 138: 119-126.

Sahlins, M., 1972. *Stone Age Economics*. Chicago: Aldine.

Sampson, A., 1987. *I Neolithiki Periodos sta Dodekanisa*. Athenes: Ekdois tou Tameiou Arhaiologikon Poron kai Apallotrioseon.

Schachermeyer, F., 1962. Forschungsbericht zur Ägaischen Frühzeit. *Archaeologischer Anzeiger* : 328-338.

Schachermeyer, F., 1976. *Die Ägaische Frühzeit 1: die vormykenischen Perioden*. Vienna: Austrian Academy of Sciences.

Schiffer, M. B., A. P. Sullivan and T. C. Klinger. 1978. The Design of Archaeological Surveys. *World Archaeology* 10/1: 1-28.

Schliemann, H., 1884. *Troja. Ergebnisse meiner neuesten Ausgrabungen in den Jahren 1882-83*. Leipzig: Brockhaus.

Schortman, E. and P. Urban. 1987. Modelling Interregional Interaction in Prehistory. *Advances in Archaeological Method and Theory* 11: 37-95.

Schortman, E., 1989. Interregional Interaction in Prehistory: The Need for a New Perspective. *American Antiquity* 54: 52-65.

Schulting, R., 1996. Antlers, bone points and flint blades: the Mesolithic cemeteries of Tévéc and Hoëdic, Brittany. *Antiquity* 70: 335-350.

Seeher, J., 1987. *Demircihöyük III*. Mainz: Philipp von Zabern.

Seeher, J., 1990. Coşkuntepe-Anatolisches Neolithikum am Nordstüfer der Aegaeis. *Istanbul Mitteilungen* 40: 9-15.

Séfériadès, M., 1983. Dikili Tash: Introduction à la préhistoire de la Macédoine orientale. *Bulletin de Correspondance Hellenique* 107: 635-677.

Séfériadès, M., 1990. Vinča et l'archéologie grecque. In D. Srejović and N. Tasić (eds), *Vinča and its World: International Symposium The Danubian Region from 6000 to 3000 B.C.*: 175-181. Belgrade: Serbian Academy of Sciences and Arts, Centre for Archaeological Research.

Semenov, S. A., 1970. *Prehistoric Technology*. London: Cory, Adams and Mackay.

Shanks, M and C. Tilley. 1987. *Social Theory and Archaeology*. Cambridge: Cambridge University press.

Shennan, S., 1986. Interaction and change in third millennium B.C. Western and Central Europe. In C. Renfrew and J. Cherry (eds), *Peer Polity Interaction and Socio-political Change*: 137-148. Cambridge: Cambridge University Press.

Shennan, S., 1989. Introduction: archaeological approaches to cultural identity. In S. Shennan (ed.), *Archaeological approaches to Cultural Identity*: 1-32. London: Unwin Hyman.

Sherratt, A., 1981. Plough and Pastoralism: Aspects of the Secondary Products Revolution. In I. Hodder, G. Isaac and N. Hammond (eds), *Pattern of the Past. Studies in Honour of David Clarke* : 261-305. Cambridge: Cambridge University Press:

Sherratt, A., 1993. "Who are you calling peripheral". Dependence and Independence in European Prehistory. In C. Scarre and F. Healy (eds), *Trade and Exchange in Prehistoric Europe*: 245-255. Oxford: Oxbow Books.

Shilik, K. K., 1997. Oscillations of the Black Sea and Ancient Landscapes. In J. Chapman and P. Dolukhanov (eds), *Landscapes in Flux. Central and Eastern Europe in Antiquity*. Oxford: Oxbow Books.

Sillar, B., 2000. *Shaping Culture. Making pots and constructing households. An ethnoarchaeological study of pottery production, trade and use in the Andes*. International Series 883. Oxford: BAR.

Skibo, J. M., 1992. *Potter Function. A use-alteration perspective*. New York and London: Plenum Press.

Smith, M. J., 1988. Function from whole vessel shape: A method and an application to Anasazi Black Mesa, Arizona. *American Anthropologist* 90: 912-922.

Sperling, J. W., 1976. Kumtepe in Troad. Trial excavation, 1934. *Hesperia* 45: 305-364.

Srejović, D., 1972. *Europe's First Monumental Sculpture: New Discoveries at Lepenski Vir*. London: Thames and Hudson.

Stanislawski, M., 1978. If pots were mortal. In R. G. Gould (ed.), *Explorations in ethnoarchaeology*: 201-228. Albuquerque: University of New Mexico Press.

Stanley, D. J. and C. Blanpied. 1980. Late Quaternary Water Exchange Between the Eastern Mediterranean and the Black Sea. *Nature* 285: 537-541.

Steadman, S. R., 1995. Prehistoric Interregional Interaction in Anatolia and the Balkans: An Overview. *BASOR* 299/300: 13-32.

Stefanova, T., 1996. A comparative Analysis of Pottery from the 'Monochrome Early Neolithic Horizon' and 'Karanovo I Horizon' and the Problems of the Neolithization of Bulgaria. *Poročilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji XXIII*: 15-38.

Strathern, M., 1988. *The Gender of Gift*. Berkeley: University of California Press.

Strejović, D. (ed.). 1988. *The Neolithic of Serbia: Archaeological Research 1948-1988*. Belgrade: University of Belgrade.

Summers, G., 1991. Chalcolithic Pottery from Kabakulak (Niğde) Collected by I. Todd. *Anatolian Studies* 41: 125-131.

Taçon P., 1991. The power of stone: symbolic aspects of stone use and tool development in western Arnhem Land, Australia. *Antiquity* 65: 192-207.

Talalay, L., 1987. Rethinking the Function of Clay Figurine Legs from Neolithic Greece: An Argument by Analogy. *American Journal of Archaeology* 91: 161-169.

Talalay, L., 1993. *Deities, Dolls, and Devices. Neolithic Figurines from Franchthi Cave, Greece*. Bloomington and Indianapolis: Indiana University Press.

Talalay, L., 1994. A Feminist Boomerang: The Great Goddess of Greek Prehistory. *Gender and History* 6:165-183.

Tasić, N., 1995. *Eneolithic Cultures of Central and Western Balkans*. Belgrade: Publishing house DRAGANIC-The heritage series.

Taylor, J., 2000. Cultural depositional processes and post-depositional problems. In R. Francovich, H. Patterson and G. Barker (eds), *Extracting meaning from ploughsoil assemblages*: 16-26. The Archaeology of Mediterranean Landscapes V. Oxford: Oxbow Books.

Tegart, W. J. M., G. W. Sheldon and D. C. Graffits. 1990. *Climate Change*. The IPCC impacts assessment. Canberra: Australian Government Publishing Service.

Temizer, R., 1960. Yazir Höyüğü Buluntuları. *Türk Tarih Kurumu Kongresi V*: 156-164.

Ternek, Z., 1987. *Explanatory Text of the Geological Map of Turkey: Istanbul*. Ankara: MTA.

Tezcan, B., 1958. Aksaray Çevresinden Derlenen Eserler. *Belleten* 22: 517-526.

Theocharis, D., 1973. *Neolithic Greece*. Athens: National Bank of Greece.

Thissen, L., 1989-90. Part II: The pottery of Ilipinar. A preliminary assessment. In J. J. Roodenberg, L. Thissen and H. Buitenhuis. Preliminary Report on the Archaeological Investigations at Ilipinar in Northwestern Anatolia. *Anatolica* 16: 80-111.

Thissen, L., 1993. New Insights in Balkan-Anatolian Connections in the Late Chalcolithic: Old evidence from the Turkish Black Sea Littoral. *Anatolian Studies* 43: 207-237.

Thissen, L., 1999. Trajectories towards the neolithisation of NW Turkey. *Documenta Praehistorica XXVI*, 6th Neolithic Studies: 29-39.

Thomas, J., 1991. *Understanding the Neolithic*. London: Routledge.

Thomas J. and C. Tilley. 1993. The Axe and the Torso: Symbolic Structures in Neolithic of Brittany. In C. Tilley (ed.), *Interpretative Archaeology*: 225-324. Oxford: Berg.

Thomas, D. H., 1975. Non-site sampling in Archaeology: Up the Creek without site? In J. W. Muller (ed.), *Sampling in Archaeology* : 61-81. Tuscon: University of Arizona press.

Tilley, C., 1989. Interpreting Material Culture. In I. Hodder (ed.). *The Meanings of Things*: 185-194. London: Unwin Hyman.

Tilley, C., 1994. *A Phenomenology of Landscape. Places, Paths and Monuments*. Oxford: Berg.

Tilley, C., 1996. *An Ethnography of the Neolithic: Early Prehistoric Societies in Southern Scandinavia*. Cambridge: Cambridge University Press.

Tilley, C., 1999. *Metaphor and Material Culture*. Oxford: Blackwell.

Todorova, H., 1974. La Plastique des Idoles en Bulgarie à la Lumière des Nouvelles Découvertes. *Bulletin de la Société Historique Bulgare* XXIX: 5-20.

Todorova, H., 1978. *The Eneolithic in Bulgaria*. International Ser.49. Oxford: BAR.

Todorova, H., 1986, *Kamennomednata epokha v Bulgarija*. Sofia: Nauka i Izkustuo.

Todorova, H., 1989. Le période chalcolithique en Bulgarie: une civilisation préurbaine. In *Le Premier Or de l'humanité en Bulgarie 5ème millénaire*: 30-33. Paris: Réunion des Musées nationaux.

Todorova, H., 1993. Die Protobronzezeit auf der Balkanhalbinsel. *Anatolica* XIX: 307-318.

Todorova, H., 1995. The Neolithic, Eneolithic and Transitional Period in Bulgarian Prehistory. In D. W. Bailey and I. Panayotov (eds), *Prehistoric Bulgaria*. Monographs in World Archaeology 22 : 79-98. Madison Wisconsin: Prehistory press.

Todorova, H. and I. Vajsov. 1993. *Novokamennata Epokha v Bulgarija*. Sofia:Nauka i Izkustuo.

Todorova, N and V. Matsanova. 2000. Late Chalcolithic Ceramic Style at Yunatsite Tell. In L. Nikolova (ed.), *Technology, Style and Society. Contributions to the Innovations between the Alps and the Black Sea in Prehistory*. International Series 854: 331-361. Oxford: BAR.

Torrence, R., 1986. *Production and Exchange of Stone Tools*. Cambridge: Cambridge University Press.

Trigger, B., 1989. *A History of Archaeological Thought*. Cambridge: Cambridge University Press.

Tringham, R., 1971. *Hunters, Fishers and Farmers of Eastern Europe 6000-3000 BC*. London: Hutchinson.

Tuan, Yi-Fu., 1977. *Space and Place. Perspective of Experience*. London: Arnold.

Ucko, P. J., 1968. *Anthropomorphic Figurines of Predynastic Egypt and Neolithic Crete with Comparative Material from the Prehistoric Near East and Mainland Greece*. London: A. Szmidla.

van Andel, T. H. and C. N. Runnels. 1995. The Earliest Farmers in Europe. *Antiquity* 69: 481-500.

van Andel, T. H., 1989. Late Quaternary sea-level changes and archaeology. *Antiquity* 63: 733-745.

van Andel, T. H., K. Gallis and G. Toufexis. 1995. Early Neolithic farming in a Thessalian river landscape. In L. Lewin, M. G. Macklin and J. C. Woodward (eds), *Mediterranean Quaternary River Environments* : 131-144. Rotterdam: Balkema.

Vasić, M., 1907. South-Eastern Elements in the Prehistoric Civilization of Serbia. *Bull. of British School at Athens* XIIV :318-342.

Vita-Finzi, C. and E. S. Higgs. 1970. Prehistoric economy in the Mount Carmel area of Palestine: site catchment analysis. *Proceedings of the Prehistoric Society* 36: 1-37.

Vitelli, K. D., 1995. Pots, Potters, and the Shaping of Greek Neolithic Society. In W.K. Barnett and J. W. Hoopes (eds), *The Emergence of Pottery: Technology and Innovation in Ancient Societies*: 55-63. Washington DC: Smithsonian Institution Press.

Vitelli, K. D., 1999. "Looking up" at Early Ceramics in Greece. In J. M. Skibo and G. M. Feinman (eds), *Pottery and People*: 184-198. Salt Lake City: The University of Utah Press.

Vlassa, N., 1963. Chronology of the Neolithic in Transylvania in the light of the Tartăria settlements stratigraphy. *Dacia* 7: 485-494.

von der Osten, H. H., 1937. *The Alişar Hüyük: Seasons of 1930-32*. Part 1. OIP 28. Chicago: University of Chicago.

Voytek, B., 1990. The use of stone resources. In R. Tringham and D. Krstić (eds), *Selevec: A Neolithic Village in Yugoslavia*. Los Angeles: University of California Press.

Wagner, R., 1975. *The Invention of Culture*. Englewood Cliffs, NJ: Prentice-Hall Inc.

Washburn, D. K., 1983. Symmetry analysis of ceramic design: two tests of the method on Neolithic material from Greece and the Aegean. In D. Washburn (ed.), *Structure and Cognition in Art*: 138-164. Cambridge: Cambridge University Press.

Welbourn, A., 1984. Endo ceramic and power strategies. In D. Miller and C. Tilley (eds), *Ideology, Power and Prehistory*: 17-24. Cambridge: Cambridge University Press.

White J.P. and N. Modjeska. 1978. Where do all the stone tools go? Some examples and problems in their social and spatial distribution in the Papua New Guinea Highlands. In I. Hodder (ed.), *Spatial Organisation of Culture* : 25-38. London: Duckworth.

Whittle, A., 1985. *Neolithic Europe: A Survey*. Cambridge: Cambridge University Press.

Whittle, A., 1995. Gifts from the earth: symbolic dimensions of the use and production of Neolithic flint and stone axes. *Archaeologia Polona* 33: 247-259.

Whittle, A., 1996. *Europe in the Neolithic: The Creation of New Words*. Cambridge: Cambridge University Press.

Whittle, A., 1997. Moving on and Moving around: Neolithic settlement mobility. In P. Topping (ed.), *Neolithic Landscapes*: 15-22. Oxford: Oxbow books.

Wijnen, M.H.J.M.N., 1981. The Early Neolithic I Settlement in Sesklo: An Early Farming Communities in Thessaly, Greece. *Analecta Praehistorica Leidensa* XIV: 1-145.

Wilke, S. and G. Thompson. 1977. *Archaeological Survey of Western Kent County, Maryland*. Annapolis: Maryland Historical Trust.

Wilkie, N. C and M. C. Savina. 1997. The earliest farmers in Macedonia. *Antiquity* 71 : 201-207.

Wilkinson, T. J., 1982. The Definition of Ancient Manured Zones by Means of Extensive Sherd-Sampling Techniques. *Journal of Field Archaeology* 9: 323-333.

Wilkinson, T. J., 1989. Extensive Sherd Scatters and Land-use Intensity: Some Recent Results. *Journal of Field Archaeology* 16: 31-46

Wiley, G. R. and P. Phillips. 1958. *Method and Theory in American Archaeology*. Chicago: University of Chicago Press.

Williams, N., 1982. A boundaries is to cross: observations on Yolngu boundaries and permission. In N. Williams and E. Hunn (eds), *Resource Managers: North-American and Australian Hunter-Gatherers*. Boulder, Colorado: Westview Press.

Wobst, H. M., 1977. Stylistic behaviour and information exchange. In C. E. Cleland. For the Director. *Research Essays in Honor of James B. Griffin*: 317-342. Ann Arbor: Museum of Anthropology, University of Michigan.

Woods, A. J., 1986. Form, Fabric and Function: Some Observations on the Cooking pot in Antiquity. In W. D. Kingery (ed.). *Technology and Style*: 157-172. Colombus, Ohio: American Ceramic Society.

Yakar, J., 1985. *The Later Prehistory of Anatolia: The Late Chalcolithic and Early Bronze Age*. International Series 268. Oxford: BAR.

Yates, T., 1990. Jacques Derrida: 'There is nothing outside of the text'. In C. Tilley (ed.), *Reading Material Culture*: 206-280. London: Blackwell.

Yellen, J., 1977. *Archaeological Approaches in the present: Models for Reconstructing the Past*. New York: Academic Press.

Yordanov, D., 1938-39. Rastitelnite Otnoshenia v Bulgarskite Chasti na Strandja Planina. *Annuare del'Universite de Sofia. II Faculte de Physic et Mathematique XXXV/3*: 1-90.

Zbenovich, G. V., 1989. *Ranii etap tripolskoi kulturi na teritorii Ukraini*. Kiev: Nauka.

Zbenovich, G. V., 1996. The Tripolye Culture: Centenary of Research. *Journal of World Prehistory* 10/2:199-237.

Zvelebil, M. (ed.). 1986. *Hunters in Transition*, Cambridge: Cambridge University Press.

Zvelebil, M., 1995. Neolithization in Eastern Europe: A View from the Frontier. *Porocilo o raziskovanju paleolitika, neolitika in eneolitika v Sloveniji XXII*: 107-127.

Zvelebil, M., 1998. What's in a name: the Mesolithic, the Neolithic and social change at the Mesolithic-Neolithic transition. In M. Edmonds and C. Richards (eds), *Understanding the Neolithic of Northwestern Europe*: 1-36. Glasgow : Cruithne Press.

Zvelebil, M. and P. Rowley-Conwy. 1984. Transition to Farming in Northern Europe: A Hunter-gatherer Perspective. *Norwegian Archaeological Review* 17(2): 104-125.

